



November 2, 2021
Project No. 104-0012

Ms. Maria Jon
U.S. Environmental Protection Agency
Emergency and Remedial Response Division
Eastern New York Section
290 Broadway
New York, New York 10007

September 2021 Sampling Report - Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Dear Ms. Jon:

Please find transmitted along with this letter the *September 2021 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*. The report summarizes the methods and findings of the 2021 groundwater sampling program for Operable Unit 2. As you have requested, this is being provided electronically, with no paper copy provided.

Do not hesitate to call (412.374.0989) or email (bjones@cardinalres.com) to discuss the findings, or if you have any questions about this report.

Sincerely,

CARDINAL RESOURCES

Barbara H. Jones, Principal

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September 2021 Sampling Report

**Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York**

Prepared for:

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October 2021

Table of Contents

1.0	Introduction	1
1.1	Site Setting.....	1
1.2	Land and Resource Use.....	1
1.3	History of Waste Disposal and Contamination	2
1.4	Overview of Remedies	2
1.4.1	OU-1 Remedy.....	2
1.4.2	OU-2 Remedy.....	3
1.5	Current Site Conditions	3
1.6	Reduced Sampling Approach	4
1.6.1	Recommendation to Permanently Close MW-4, OW-21, and OW-22	4
1.6.2	Reduced Monitoring Frequency	5
2.0	Groundwater Sample Collection	6
2.1	Groundwater Elevations	6
2.2	Wells and Equipment.....	6
2.3	Well Purging and Sampling	6
3.0	Groundwater Results	8
3.1	Groundwater Elevations	8
3.2	Summary of Groundwater Quality Results.....	8
3.3	Trends for Chlorinated VOCs	9
3.4	Benzene Concentration Trends	12
3.5	Achievement of MCLs and SGVs	13
3.6	Monitored Natural Attenuation Trends	14
4.0	Data Quality Review	15
4.1	Introduction	15
4.2	Results of Data Review	16
4.2.1	Field QC Samples.....	16
4.2.2	Other Data Qualification and Data Usability	18
5.0	Summary.....	19
6.0	References.....	21

List of Tables

Table 1	Groundwater Field Stabilization Parameters – September 2021
Table 2	Groundwater Elevation Data – September 2021
Table 3	Summary of Detected TCL Volatile Organic Compounds in Groundwater - September 2021
Table 4	MCL and SGV Exceedances, 1999, 2004, and 2011 through 2021
Table B-1	(Appendix B) Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater

List of Figures

Figure 1	Site Location Map
Figure 2	Land and Resource and Use
Figure 3	Groundwater Contour Map – June 2019
Figure 4	Volatile Organic Compound Exceedances in Groundwater – June 2019
Figure 5	Chlorinated VOC Trends in OW-5 and OW-13/OW-13R, Pre-Excavation to June 2019
Figure 6	Chlorinated VOC Trends in OW-2, OW-5, and OW-6, 2006 - 2019
Figure 7	Benzene Concentration Trends in OW-13/13R and OW-22, Pre-Excavation to June 2019

List of Appendices

Appendix A	Laboratory Report with Marked Form Is from Data Review
Appendix B	Historic Sampling Results (Table B-1)
Appendix C	Data Quality Review – Checklist
Appendix D	Photographs

1.0 Introduction

This report summarizes the methods and results of a field sampling program performed on September 20, 21, and 22, 2021 at the Carroll and Dubies Superfund Site (site), Town of Deerpark, Orange County, New York. Monitoring wells OW-2, OW-5, OW-6, OW-10R, OW-13R, OW-18, OW-19, and OW-24 were sampled. The purpose of this sampling program is to document volatile organic compound (VOC) concentrations in the outwash aquifer at the site. The field work followed the August 2005 Supplemental Sampling Work Plan (Cardinal Resources LLC [Cardinal Resources], 2005) approved by the United States Environmental Protection Agency (U.S. EPA), and incorporated the recommendations of the *November 2006 Sampling Report* (Cardinal Resources, 2007). The monitoring program reflects a reduced sampling approach, as described in a letter to Ms. Maria Jon of U.S. EPA dated March 27, 2020.

1.1 Site Setting

The three-acre site is located in the Town of Deerpark in Orange County, New York, which is approximately 3,000 feet northeast of the City of Port Jervis, New York (Figure 1). The site is situated on the northwestern flank of the Neversink Valley. Gold Creek lies approximately 1,500 feet to the east, and the Neversink River is located approximately 2,500 feet beyond Gold Creek.

The site is underlain by sand and gravel deposits of glacial and glaciofluvial origin. Groundwater monitoring wells on the site have been completed in the outwash unit, found above a low-permeability till zone that functions as an aquitard. The outwash unit consists of fine to coarse sand with fine to coarse gravel. The direction of groundwater flow is generally toward the southeast.

1.2 Land and Resource Use

Figure 2 shows land use features in the vicinity of the former Carroll and Dubies lagoons. The immediate surrounding area includes undeveloped woodlands to the north; undeveloped woodlands, quarry ponds, and commercial sand and gravel operations to the northeast; the closed City of Port Jervis landfill, the Orange County Transfer Station, and a concrete products company to the south; and a sparsely vegetated, shale bedrock hillside to the west. In 2004, the City of Port Jervis began a small sand and gravel operation on land it owns, immediately to the southeast of the former lagoons, in the vicinity of OW-5 and OW-6. These conditions have remained

stable during post-remediation monitoring, although truck traffic along the road adjacent to OW-17, OW-18, OW-19, OW-23, and OW-24 associated with the commercial sand and gravel operations to the northeast has increased over the past ten years. During the September 2021 sampling event, the City of Port Jervis was not actively excavating and screening sand and gravel.

1.3 History of Waste Disposal and Contamination

In 1971, the three-acre Carroll and Dubies Site began operating as a disposal facility consisting of a series of lagoons. The majority of wastes disposed in the lagoons were septic waste, municipal sewage sludge, and solid waste. The site also received liquid industrial wastes from approximately 1971 to 1979.

Over time, waste constituents in the lagoons leached into groundwater and affected the outwash aquifer. VOCs were of particular concern because of their dispersion in the aquifer and relative risk. Benzene, vinyl chloride, and other VOCs were found through a series of investigations to exceed Applicable or Relevant and Appropriate Requirements (ARARs) in site wells.

1.4 Overview of Remedies

The remedies selected for the site were defined by two operable units (OU), the waste lagoons themselves, and the impacted groundwater. Remedies were selected and executed to remove wastes from the lagoons, restore the site to a safe and stable condition, and promote and track improvements in groundwater quality.

1.4.1 OU-1 Remedy

The goals of the OU-1 remedy conducted in 1999 were to prevent further leaching of contaminants into groundwater, and to reduce the risks to potential future workers at the site who could come in contact with lagoon wastes. The steps in this process were:

- Excavation of all wastes from Lagoons 1, 2, 3, 4, 6, 7, and 8, along with surrounding soils that exceeded specified levels for indicator chemicals.
- Appropriate management of all excavated wastes and soils.
- Placement of imported clean fill in the excavations, followed by grading for drainage control and vegetation.

1.4.2 OU-2 Remedy

The goals of the ongoing OU-2 remedy, which was initiated in 1999, are to allow natural attenuation to reduce or eliminate the risks associated with the ingestion of site groundwater for future site workers and to protect Gold Creek from site-related impacts. A monitoring program was designed to address concerns primarily related to determining whether the source removal was successful and the site is stable. The steps in the OU-2 remedy are:

- Execution of a monitoring program in accordance with Work Plans and other documents prepared for the project and approved by the U.S. EPA.
- With each sampling round, a report is prepared for U.S. EPA that documents the progress made in achieving the remedial goals.

1.5 Current Site Conditions

In 2021, twenty-two years after completion of the OU-1 remedy, the areas where the former lagoons were located are densely vegetated. Monitoring wells virtually disappear in the vegetation. The tow path road is no longer passable for vehicles because of overgrowth, and it is not easy to navigate the path on foot. Employees at the waste transfer station, Public Works gravel pit, and shooting range keep an eye on the area; the entrance road is gated. In recent years there has not been evidence of trespass, and there has never been evidence of vandalism or site disturbance. The access road along which OW-17, OW-18, OW-19, OW-23, and OW-24 are located is busy with heavy truck traffic to and from the commercial sand and gravel quarry. These monitoring wells, like those near the former lagoons, are hidden in vegetation.

The photographic log in Appendix D shows how the former lagoon areas that had been excavated, backfilled, graded, and seeded with grass, have now naturalized with trees and understory vegetation. Deer and other wildlife have been observed.

1.6 Current Sampling Approach

For an overview of the sampling history from 2006 to 2015 for OU-2, refer to the *March 2018 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*, dated April 2018. The introductory section in that report describes the 2006 groundwater monitoring program in response to the first five-year review; the

resumption of annual monitoring in 2007, continuing through 2011; and a modified sampling frequency of once every five quarters thereafter.

As part of the 2015 Five Year Review, U.S. EPA agreed to a reduced sampling approach for 2015-2020. Monitoring was conducted every five quarters, for four sampling rounds. Ten monitoring wells were sampled, OW-2, OW-5, OW-6, OW-10R, OW-13R, OW-18, OW-19, OW-21, OW-22, and OW-24.

In March 2020, in advance of U.S. EPA's issuance of its fourth five-year review, the PRPs outlined a monitoring program going forward:

- Permanent abandonment of MW-4, OW-21, and OW-22.
- Reduced sampling frequency from once every five quarters to once every nine quarters.
- Monitoring of OW-2, OW-5, OW-6, OW-10R, OW-13R, OW-18, OW-19, and OW-24 for VOCs, redox, dissolved oxygen, pH, and temperature.

The 2021 sampling program was performed for the monitoring wells and parameters described above, nine quarters after sample collection in June 2019.

1.6.1 Recommendation to Permanently Close of MW-4, OW-21, and OW-22

No response has been received from U.S. EPA regarding the recommendation to permanently close MW-4, OW-21, and OW-22. This will be done upon U.S. EPA's acknowledgement and approval. The technical justification for monitoring well closure is described here.

MW-4 was installed in 1993 and OW-21 and OW-22 were installed in 1994, making these monitoring wells 27 to 28 years old. The wells are in poor physical condition and their integrity for sampling is uncertain. There is the potential for the wells to become conduits for migration of contamination to subsurface water-bearing zones. The table below summarizes the conditions. OW-18 and OW-19, downgradient of the historic landfill, are better positioned to monitor groundwater quality.

Well/Year of Installation	Depth, feet	Most Recent Sampling Round	Location	Conditions and Concerns
MW-4, 1993	50.3	2014	West side of towpath downgradient of former lagoons 1, 3, and 4	Flush-mount monitoring well on forest floor; susceptible to flooding of outer casing.
OW-21, 1994	47.1	2019	In old municipal landfill on east side of towpath	Settlement in the old landfill has caused the ground surface to settle below the concrete surface seal.
OW-22, 1994	48.0	2019	In old municipal landfill on east side of towpath	Settlement in the old landfill has caused the ground surface to settle below the concrete surface seal. The surface seal has broken.

1.6.2 Reduced Monitoring Frequency

Groundwater concentrations are stable to declining and institutional controls are in place. Conditions will continue to be protective of human health and the environment, with no exposure pathways that could result in unacceptable risks. Based on these conditions, a reduced sampling frequency is outlined here to 2025. This will result in two sampling episodes, third quarter 2021 (completed) and fourth quarter 2023. Monitoring wells OW-2, OW-5, OW-6, OW-10R, OW-13R, OW-18, OW-19, and OW-24 will be monitored for VOCs, redox, dissolved oxygen, pH, and temperature.

Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
2019	-	Sampled	-	-
2020	-	-	-	-
2021	-	-	Sampled	-
2022	-	-	-	-
2023	-	-	-	Sample
2024	-	-	-	-
2025	-	-	-	-

2.0 Groundwater Sample Collection

This section describes methods used to collect groundwater samples for analysis. The results of the groundwater sampling program are provided in Section 3.0.

2.1 Groundwater Elevations

Groundwater elevations were measured on September 22, 2021. The depth to groundwater was measured from the reference point elevation using an electronic water-level meter and recorded on a monitoring well sampling form.

2.2 Wells and Equipment

Dedicated low-flow bladder pumps were used to purge and sample monitoring wells OW-2 and OW-6, OW-10R. Monitoring wells OW-5, OW-13R, OW-18, OW-19, and OW-24 were sampled with a portable bladder pump. The portable bladder pump was decontaminated initially and after sampling each well by:

- Washing with low phosphate detergent and tap water
- Rinsing with tap water
- Rinsing with deionized water
- Air drying

Clean disposable high density polyethylene (HDPE) tubing and a clean disposable PE bladder were used for each well sampled with the bladder pump.

2.3 Well Purging and Sampling

Groundwater samples were collected on September 21 and September 22, 2021. All wells were purged using low-flow techniques (between 100 and 200 milliliters per minute [mL/min]). During purging of each monitoring well, temperature, dissolved oxygen, reduction/ oxidation (redox) potential, conductivity, and pH were monitored and recorded on field forms in average intervals of 5 minutes.

The groundwater field parameters were measured with a YSI Model 556 MPS-10 multi-parameter unit equipped with a flow-through cell. All equipment was calibrated prior to use in the field. The goal was to obtain three consecutive readings of the field parameters within the following ranges:

- ± 1.0 degree centigrade ($^{\circ}\text{C}$) for temperature
- ± 10 percent (%) for dissolved oxygen
- ± 10 millivolts (mV) for redox potential
- $\pm 3\%$ for conductivity
- ± 0.1 for pH

The final stabilized readings prior to sample collection for each of the monitoring wells are provided in Table 1. Groundwater purged from wells sampled with the bladder pump was initially turbid but cleared with low-flow purging. Samples were shipped on ice to Eurofins Environment Testing America, North Canton, Ohio via FEDEX.

3.0 Groundwater Results

This section describes the results of the September 2021 groundwater sampling event and presents a discussion of site-wide groundwater conditions.

3.1 Groundwater Elevations

The groundwater elevations for this sampling round are presented in Table 2, and groundwater elevation contours are shown in Figure 3.

The groundwater elevations in the wells were on the average 0.37-foot higher than measured in June 2019. The direction and gradient of groundwater flow toward the southeast and Gold Creek were about the same. Monitoring wells close to the hillside near former Lagoon 8 (OW-9, OW-10R, OW-15) had groundwater elevations ranging from between 440.27 feet mean sea level (msl) at OW-10R to 460.24 feet msl at OW-15.

The groundwater elevations in the remaining monitoring wells were all between 431 and 433 feet msl. For these wells, those closest to the former OU-1 area to the west (MW-4, OW-2, OW-3, OW-5, OW-6, OW-8, OW-13R) had groundwater elevations ranging from 432.02 (OW-3) to 432.80 (OW-8). The remaining monitoring wells at lower topographic elevations toward Gold Creek (OW-16, OW-17, OW-18, OW-19, OW-21, OW-22, OW-23, OW-24, OW-25) had groundwater elevations ranging from 431.33 (OW-23) to 431.94 (OW-25). The gradient from OW-15 southwest of the former lagoons to OW-22 in the closed landfill was about 0.09 in September 2021. From OW-22 to OW-18, near Gold Creek, the gradient was essentially flat at 0.0001. The steeper gradient on the western side of the site is due to the depth to bedrock along the valley wall. As the depth to bedrock increases towards the valley floor, the thickness of the alluvial fill increases and the groundwater gradient flattens.

3.2 Summary of Groundwater Quality Results

VOCs detected in groundwater in September 2021 are presented in Table 3. The laboratory analytical report, including marked Form Is from the data quality review process, is provided in Appendix A. Historical data of detected organic compounds have been combined with the most recent data and are presented in Table B-1, Appendix B.

Six VOCs were detected in various monitoring wells during this sampling event, five of which exceeded state or federal regulatory standards or guidelines in one or more wells. One monitoring well, OW-24, downgradient to the east near the gravel quarry road, was nondetectable for VOCs during this sampling round. Results were compared to NYSDEC Standards or Guidance Values (SGVs) and U.S. EPA Maximum Contaminant Levels (MCLs) for drinking water. Regulatory exceedances of VOCs in groundwater are shown in Figure 4 and Table 4.

VOC concentrations in monitoring wells in September 2021 were comparable to the ranges previously observed. Benzene, which was detected in three monitoring wells, was in all cases less than the MCL of 5 ug/L, but greater than the SGV of 1 ug/L. Chlorobenzene was detected in three wells and was less than the MCL of 100 ug/L, exceeding the SGV of 5 ug/L in two of the three monitoring wells. The only MCLs exceeded were for tetrachloroethene, exceeded in three wells, and trichloroethene, exceeded in two wells.

In the remainder of this section, specific groundwater quality trends and conditions are discussed in greater detail:

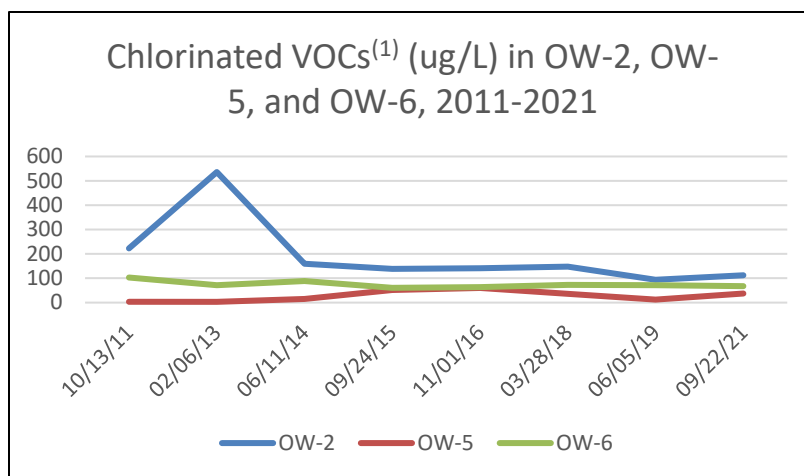
- Concentration trends for chlorinated VOCs
- Concentration trends for benzene
- Achievement of regulatory limits
- MNA trends

3.3 Trends for Chlorinated VOCs

The primary chlorinated VOCs of concern are tetrachloroethene, trichloroethene, and the degradation product cis-1,2-dichloroethene. These constituents are detected on the eastern side of the site in OW-2, OW-5, and OW-6 (Table 3; Figure 4). The monitoring wells are close to former lagoons 1 and 2, which once contained industrial waste. OW-2, closest to the former lagoons, has the highest concentrations of chlorinated VOCs, and OW-5, downgradient of former lagoon 1 by about 150 feet, has the lowest. In September 2021 tetrachloroethene exceeded the MCL and SGV in each of these monitoring wells. Trichloroethene exceeded the MCL and SGV in OW-2 and OW-6, and cis-1,2-dichloroethene exceeded the SGV in OW-2, OW-5, and OW-6.

A useful tool in evaluating trends for the chlorinated VOCs tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene is to add them together as “total” chlorinated

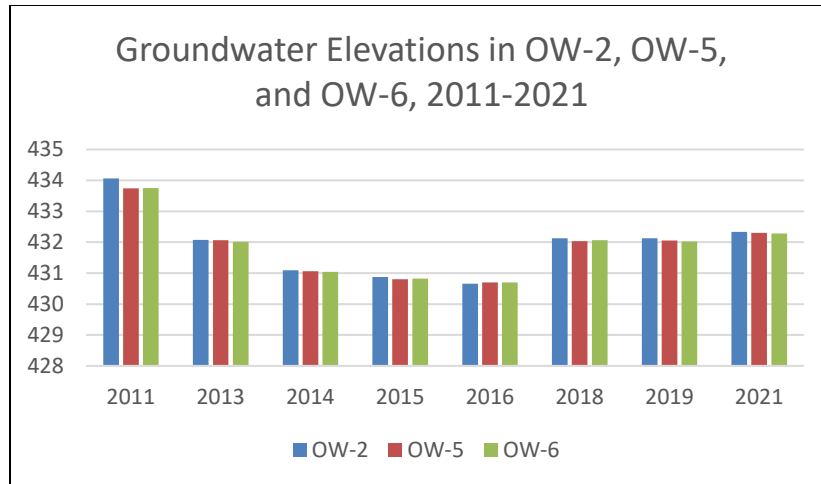
VOCs or CVOCs. The graph below shows CVOC trends in OW-2, OW-5, and OW-6 from 2011 through 2021.



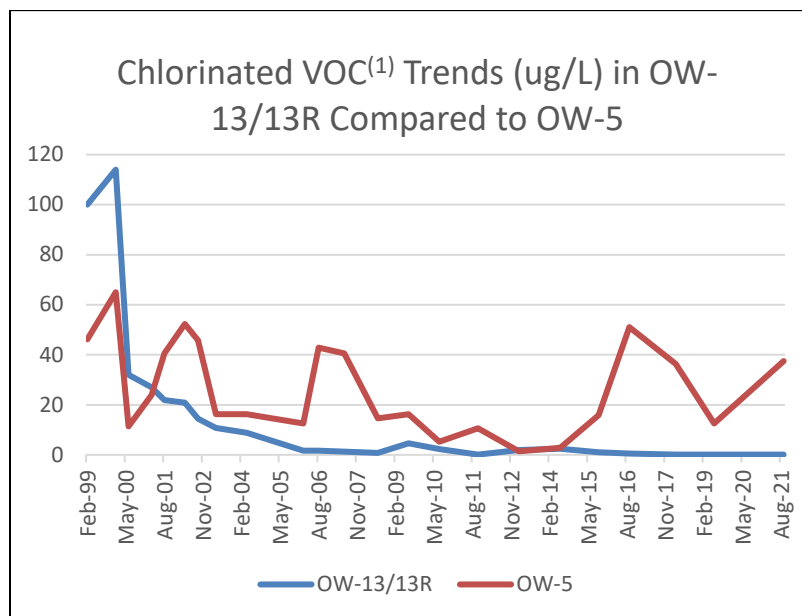
⁽¹⁾Sum of 1,2-dichloroethene, trichloroethene, and tetrachloroethene

This graph shows a fluctuating but gradually downward trend in OW-2 and OW-6 over the past ten years. In OW-2, the 2021 CVOC concentration is 50% lower than the 2011 concentration (113 ug/L compared to 223 ug/L). In OW-6 the 2021 CVOC concentration is 34% lower than in 2011 (67.9 ug/L compared to 103 ug/L). There is no apparent downward trend in OW-5 over the past 10 years, where the average concentration of 27 ug/L for the past ten years appears to have plateaued.

The rise in CVOCs in OW-2 in 2013, with a subsequent decline, is possibly related to fluctuating groundwater elevations. A less pronounced peak is apparent in OW-5 in 2015-2016. As shown in the graph below, groundwater elevations in the three wells were unusually high during the 2011 sampling program. The high groundwater levels in 2011 may have temporarily increased the thickness of the saturated zone resulting in dissolution of contaminants. This observed correlation may partially to explain concentration fluctuations.



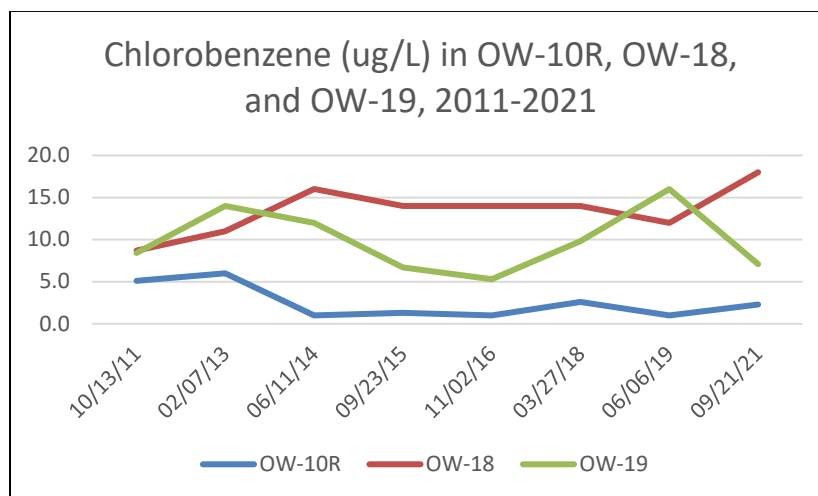
Refer to Table 1. Compared to conditions at OW-2, OW-5, and OW-6, groundwater on the western side of the site (OW-10R, OW-13R, OW-18, and OW-19) has lower redox and dissolved oxygen (is more reduced) and is more amenable to natural attenuation through reductive dechlorination. Also see Section 3.6. For monitoring wells on the western side of the site, chlorinated VOCs in general showed a downward trend over time once OU-1 actions were complete. For example, while the concentration of chlorinated VOCs was higher in OW-13/OW-13R in 1999-2000 compared to OW-5 as shown below, favorable geochemical conditions resulted in a rapid and smooth decline. Chlorinated VOCs have not exceeded criteria at OW-13/13R since 2004 and have not been detected since 2014. In OW-5, conditions for degradation have been less favorable and the decline since 1999-2000 has been slower and more variable.



(1)Sum of 1,2-dichloroethene, trichloroethene, and tetrachloroethene

Chlorobenzene is also a chlorinated VOC, but it likely had a different disposal history and is detected in different monitoring wells. Wells where chlorobenzene is detected are downgradient of the historic municipal landfill (OW-18 and OW-19) and former lagoon 8 (OW-10R). Chlorobenzene is a common ingredient in urinal cakes and is also used in septic tank and drain cleaner preparations, so it likely associated with sewage and septage, which were once disposed in some of the lagoons and possibly in the landfill. Chlorobenzene exceeded the NYSDEC SGV of 5 ug/L but not the MCL of 100 ug/L during this sampling round in OW-18 (18 ug/L) and OW-19 (7.1 ug/L). It was detected in OW-10R but at 2.3 ug/L it did not exceed the NYSDEC SGV.

Over the past ten years chlorobenzene concentrations appear to have declined in OW-10R, closest to the former lagoons, and have been variable with no trend in OW-18 and OW-19, downgradient of the old landfill, as illustrated in the graph below.

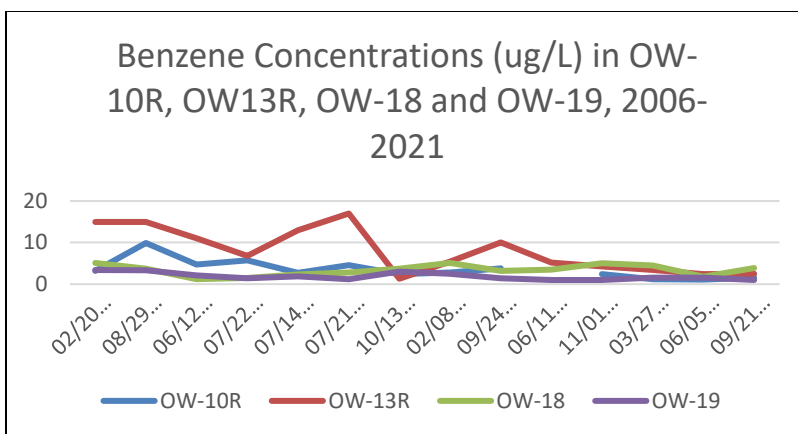


3.4 Benzene Concentration Trends

Benzene has been detected in several monitoring wells in the southwestern areas of the site, with historically the highest concentrations observed in OW-10/10R, with a high concentration of 2,600 ug/L in 1995, and OW-13/13R, with a high of 620 ug/L in 2000. Benzene concentrations declined dramatically upon completion of OU-1. Benzene has not exceeded the MCL of 5 ug/L in OW-10R since 2008 and has not exceeded in OW-13R since 2014.

In the 2021 sampling round benzene was detected in three wells, OW-10R (1.6 ug/L), OW-13R (2.5 ug/L), and OW-18 (3.9 ug/L), in all cases below the MCL of 5 ug/L but greater than the NYSDEC SGV of 1 ug/L. As shown in the graph below for benzene

trends from 2006 through 2021, concentrations have plateaued for OW-10R, OW-18, and OW-19 to below the MCL and approaching the NYSDEC SGV. In OW-13R the concentrations have continued to decline, from an average of 13 ug/L for 2006 through 2010, to an average of 4.3 ug/L, for the period of 2011 through 2021.



3.5 Achievement of MCLs and SGVs

Since completion of OU-1 remediation in 1999, many of the MCLs and NYSDEC SGVs have been met in groundwater wells downgradient of the former lagoons. From 1999 to 2004 there was a substantial reduction in MCL and SGV exceedances. Since 2010, conditions have remained about the same, indicating stability and the plateau in concentrations as they drop to the relatively low levels achievable through natural attenuation. The chart below shows changes in MCL and VOC exceedances for the eight monitoring wells sampled in 2021.

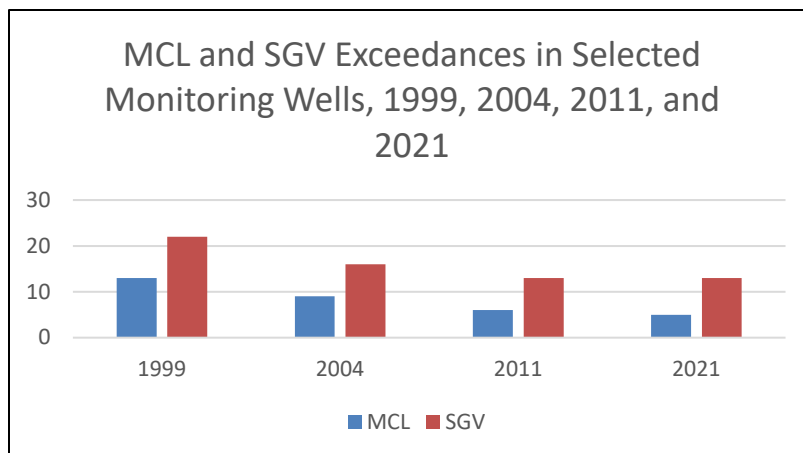


Table 4 summarizes MCL and SGV exceedances through the current sampling round. In 2021, 5 MCLs and 13 SGVs were exceeded for the wells sampled.

3.6 Monitored Natural Attenuation (MNA) Trends

The number of MNA parameters measured were reduced with U.S. EPA approval beginning in 2015. Two parameters that are important MNA indicators, dissolved oxygen and redox, continue to be measured during field stabilization procedures (Table 1). Reduced conditions as indicated by low dissolved oxygen and low redox are favorable for reductive dechlorination of chlorinated VOCs, which is a natural attenuation process.

The patterns seen in September 2021 are consistent with the observations presented previously. The areas predicted to be most amenable to degradation of chlorinated VOCs are to the south and west (OW-10R, OW-13R, OW-18, and OW-19). The area predicted to be the least amenable is to the northeast (OW-2, OW-5, and OW-6). Using data from Table 1:

Area	Average dissolved oxygen, mg/L	Average Redox, mV
West and south: OW-10R, OW-13R, OW-18, OW-19	0.38	-6.3
Northeast: OW-2, OW-5, OW-6	6.61	178.4

In summary, for OW-10R, OW-13R, OW-18, and OW-19:

- Low dissolved oxygen and/or redox potential indicating reduced conditions were found; and
- Chlorinated VOCs cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene were not present.

By comparison, in OW-2, OW-5 and OW-6, dissolved oxygen and redox were high, and cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene were detected.

4.0 Data Quality Review

Data quality review was performed on the analytical data packages to assure that quality and usability requirements were met. Based on this Tier II review, the analytical results were usable and of acceptable quality; no results were rejected. The remainder of this section discusses the data quality review process and results for the VOC data package.

4.1 Introduction

A Tier II data quality review of the sample data package was completed using U.S. EPA guidelines. The Tier II data evaluation consisted of a review of data package completeness and a quality control (QC) review, as summarized in the QC forms provided by the laboratory, covering:

- Signed transmittal page
- Data package narrative
- Sample transmittal documentation
- Reagent traceability summary
- Standard VOC QC forms for:
 - System monitoring compound (surrogate recovery)
 - Matrix spike/matrix spike duplicate (MS/MSD) recovery
 - Laboratory control samples
 - Method blank summary
 - Instrument performance check
 - Internal standard summary and retention time (RT) summary
 - Initial calibration data
 - Continuing calibration data
- Form Is and raw data for field samples, blanks, laboratory control samples, MS/MSDs
- Copies of logbook pages documenting sample preparation, extract transfer, instruments, and sample tracking
- Holding times
- Form Is and raw data for field and QC samples
- Field duplicates and field, trip, and equipment rinsate blanks

A checklist documenting the review of the data package is provided in Appendix C.

4.2 Results of VOC Data Review

The hand-marked, qualified Form Is are provided in Appendix A with the laboratory report. A summary table included with this report (Appendix C) reflects the qualified data. The data qualifiers for this analytical package are:

- J: Estimated result
- UJ: The analyte was not detected above the reporting limit, but the reporting limit is approximate

The data package was complete and appropriately organized, and all relevant supporting information was provided. The laboratory reported that all samples arrived in good condition, properly labeled, and with chain of custody. FEDEX next-day delivery was requested but FEDEX was delayed, and when the cooler was delivered to the laboratory the internal temperature was greater than 6° Centigrade. No data qualifications were made, because the samples were acid preserved, had been iced and chilled upon collection, were insulated in foam sleeves and bubble wrap, and were sealed. Samples were processed immediately upon receipt by the laboratory and all analyses were performed within the 14-day analytical window. According to US EPA Hazardous Waste Support Section SOP No. HW-34A, Revision 1, September 2016, Table 1, qualification based on cooler temperature deviation should be based on professional judgment; the factors listed indicate sample acceptability without qualification.

4.2.1 Field QC Samples

Sample Collection Blanks: Three blanks related to sample collection (different from the method blanks prepared by the laboratory for internal QA/QC) were analyzed as part of this sampling round:

- Field Blank (FB): One field blank was collected. The field blank was nondetectable at the laboratory reporting limits. Field blanks are prepared at the sampling site by pouring deionized water provided by the laboratory into laboratory-prepared VOA (volatile organic analyte) bottles, shipping the bottles with field samples, and having the samples analyzed along with field samples. These blanks are used as an indicator of airborne or other type of contamination occurring during the sampling process that could compromise sample quality.
- Trip Blank (TB): One trip blank was shipped with the samples. The trip blank was nondetectable at the laboratory reporting limits. Trip blanks are prepared in the laboratory by pouring deionized water into laboratory-prepared VOA bottles.

The filled containers are shipped with the sample containers to the site, remain in the sample coolers throughout the sampling process, are shipped back to the laboratory along with the field samples, and are analyzed along with the field samples. A trip blank is used as an indicator of airborne or other type of contamination that could occur during the shipping process to compromise sample quality.

- **Rinsate Pump Blank:** One pump rinsate blank was collected. The rinsate blank sample was nondetectable at the laboratory reporting limits. This blank was collected to check cleaning methods for the portable bladder pump used to sample several of the monitoring wells, to verify that sampling equipment and methods do not compromise sample quality. The pump was cleaned initially and after each of the monitoring wells where used. After sampling OW-13R, deionized water was poured through and onto the pump body, then collected in VOA bottles. The pump rinsate blank was analyzed along with other field samples.

Field Duplicate: A groundwater field duplicate was collected for OW-5 and OW-5 DUP.

The field duplicate is checked for relative percent difference (RPD) as:

$$\frac{|A - B| \times 100}{\frac{1}{2}(A + B)}, \quad \text{where A is sample value and B is duplicate value.}$$

The RPD for aqueous samples is to be within 30%. For OW-5/OW-5 DUP analysis (three detections), the maximum RPD was 5.6%, with no qualifications.

Field MS/MSD Samples: Field matrix spike/matrix spike duplicate (MS/MSD) samples were collected OW-6 MS/MSD. With a matrix spike, a compound of known concentration is added to the sample, and the sample is analyzed. The detected concentration is compared to the amount added. This procedure provides an indication about how the sample matrix (physical/chemical properties inherent to the sample) could affect the ability to detect target compounds.

Percent recovery for OW-6 MS for tetrachloroethene (detected in the unspiked sample) was slightly below the lower limit. Percent recovery and/or relative percent differences (RPD) for OW-6 MSD were not met for non-detect 1,1,2-trichloro-1,2,2-trifluoroethane and 1,1-dichloroethane, methyl acetate; and trichloroethene (detected in the unspiked sample). Tetrachloroethene and trichloroethene were qualified as J for estimated, and nondetects were qualified as UJ.

4.2.2 Other Data Qualification and Data Usability

No other qualifiers were placed on samples as part of the data validation process other than those noted above. OW-2 required dilution for tetrachloroethene (3.3x). OW-6 was out of range for tetrachloroethene but was not re-analyzed due to insufficient sample. The laboratory flagged the results with E as estimated. This result was subsequently qualified as J for estimated during the data quality review process, both for being out of range and for the MS result low recovery. The qualifications did not affect the usability of the data, and no results have been rejected.

5.0 Summary

The results of the 2021 sampling program for the Carroll and Dubies site show:

- Groundwater elevations were higher on average by 0.37- foot, compared to June 2019. No consistent trend has been observed between the concentrations of VOCs in groundwater and the season and/or groundwater elevations.
- Since completion of OU-1 in 1999 benzene has declined three orders of magnitude in OW-10R (from 2,600 ug/L) and two orders of magnitude in OW-13R (from 620 ug/L). In the past fifteen years benzene concentrations have plateaued for OW-10R, OW-18, and OW-19 to below the MCL of 5 ug/L and approaching the NYSDEC SGV of 1 ug/L. In OW-13R the concentrations have continued to decline, from an average of 13 ug/L for 2006 through 2010, to an average of 4.3 ug/L for the period of 2011 through 2021.
- In September 2021 tetrachloroethene exceeded the MCL and SGV in OW-2, OW-5, and OW-6, downgradient of former lagoons 1 and 2. Trichloroethene exceeded the MCL and SGV in OW-2 and OW-6, and cis-1,2-dichloroethene exceeded the SGV only in OW-2, OW-5, and OW-6. There is a fluctuating but gradually downward trend in OW-2 and OW-6 for total chlorinated CVOCs (sum of tetrachloroethene, trichloroethene, and 1,2-dichloroethene) over the past ten years. In OW-2, the 2021 CVOC concentration is 50% lower than the 2011 concentration (113 ug/L compared to 223 ug/L). In OW-6, the 2021 CVOC concentration is 34% lower than in 2011 (67.9 ug/L compared to 103 ug/L). There is no apparent downward trend in OW-5 over the past 10 years, where the average concentration of 27 ug/L appears to have plateaued.
- Chlorobenzene exceeded the NYSDEC SGV of 5 ug/L but not the MCL of 100 ug/L during this sampling round in OW-18 (18 ug/L) and OW-19 (7.1 ug/L). It was detected in OW-10R but at 2.3 ug/L it did not exceed the NYSDEC SGV. Over the past ten years chlorobenzene concentrations have declined in OW-10R, closest to the former lagoons, and have been variable with no trend in OW-18 and OW-19, downgradient of the old landfill. This chemical is associated with sewage and septage, which was disposed of in some of the historic lagoons and possibly in the old landfill.

Groundwater monitoring results since completion of OU-1 actions in 1999 demonstrate that natural attenuation has degraded VOCs, and the rates of degradation have become slow to flat as the concentrations decline. This is the expected result, as the declining contaminant concentrations reduce the driving force for the attenuation processes. As the rate of attenuation continues to slow, it may be years before MCLs and SGVs are met in all monitoring wells throughout the plume, but site conditions will continue to be stable. With stable to declining groundwater concentrations and institutional controls in place, conditions will continue to be protective of human health and the environment,

with no exposure pathways that could result in unacceptable risks.

The OU-2 groundwater remediation ROD, written in 1996, stated that natural attenuation of organic contaminants should achieve treatment of groundwater “to below federal drinking water and state groundwater standards through naturally occurring removal processes” and that “groundwater modeling estimated that contaminants would attenuate to these standards within five years of completion of the remedy selected for the lagoons.” The pre-1996 modeling results referenced in the OU-2 ROD have not proven out, however, much more is known about natural attenuation trends and benefits than 25 years ago.

8.0 References

Cardinal Resources Inc., August 2019, *June 2019 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*, Prepared for Carroll and Dubies PRP Group.

Cardinal Resources Inc., July 2018, *March 2018 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*, Prepared for Carroll and Dubies PRP Group.

Cardinal Resources LLC, November 2006, *August 2006 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*.

Cardinal Resources, Inc., August 2005, *Supplemental Sampling Work Plan, Carroll and Dubies Superfund Site*, Prepared for Kolmar Laboratories, Inc. and Wickhen Products, Inc.

Cardinal Resources, Inc., March 2005, *Supporting Documentation for Five-Year Review, Carroll and Dubies Superfund Site*, Prepared for Kolmar Laboratories, Inc. and Wickhen Products, Inc.

United States Environmental Protection Agency, 2015, *Five-Year Review Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York*, Prepared by U.S. EPA Region 2, New York, New York.

Tables

Table 1
Groundwater Field Stabilization Parameters
September 2021
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well ID	Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Redox (mV)	Conductivity (uS/cm)	pH (standard units)
OW-2	09/22/21	11.26	7.76	181.2	169	5.43
OW-5*	09/22/21	11.85	4.26	173.0	247	5.18
OW-6	09/22/21	11.21	7.80	180.9	110	5.24
OW-10R*	09/21/21	12.73	0.54	29.0	496	6.42
OW-13R*	09/21/21	12.28	0.41	-3.0	542	6.83
OW-18*	09/21/21	13.13	0.23	-33.9	534	6.80
OW-19*	09/21/21	13.76	0.33	-17.4	437	6.63
OW-24*	09/21/21	11.26	5.54	121.5	244	6.86

Notes:

mg/L = milligrams per liter

mV = milliVolts

uS/cm = microSiemens per centimeter

* Sampled with bladder pump

Table 2
Groundwater Elevation Data⁽¹⁾
September 22, 2021
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well No.	Top of Casing Elevation	Screened Interval	Depth to Groundwater	Groundwater Elevation
MW-4	470.13	35.3 - 50.3	37.76	432.37
OW-2	472.33	30.0 - 47.0	40.00	432.33
OW-3	472.70	30.0 - 46.5	40.68	432.02
OW-4	473.33	26.5 - 37.5	Not Measured	Not Measured
OW-5	459.85	25.5 - 45.5	27.55	432.30
OW-6	464.40	31.4 - 51.4	32.12	432.28
OW-8	464.63	34.6 - 54.6	32.23	432.40
OW-9	472.91	25.3 - 35.3	29.61	443.30
OW-10R	469.27	29.0 - 39.0	29.00	440.27
OW-13R	457.69	25.0 - 35.0	25.64	432.05
OW-15	472.05	22.0 - 32.0	11.81	460.24
OW-16	453.90	18.0 - 28.0	22.06	431.84
OW-17	447.18	11.0 - 21.0	15.38	431.80
OW-18	444.57	11.0 - 21.0	12.80	431.77
OW-19	438.69	5.0 - 15.0	7.29	431.40
OW-21	467.46	37.1 - 47.1	35.67	431.79
OW-22	467.10	38.0 - 48.0	35.27	431.83
OW-23	444.73	29.0 - 39.0	13.40	431.33
OW-24	446.77	14.4 - 24.4	15.22	431.55
OW-25	452.47	20.0 - 30.0	20.53	431.94

⁽¹⁾Data reported in feet; elevations relative - mean sea level; 1988 National Geodetic Vertical Datum.

⁽²⁾Top of casing elevations surveyed by Maser Consulting P.A.

Table 3
Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
September 2021
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Compound	NYSDEC	U.S. EPA	OW-2	OW-5	OW-5-DUP	OW-6	OW-10R
	SGV	MCL	09/22/21	09/21/21	09/21/21	09/22/21	09/21/21
Benzene	1 (S)	5	2.5 U	1.0 U	1.0 U	1.0 U	1.6
Chlorobenzene	5 (S)*	100	2.5 U	1.0 U	1.0 U	1.0 U	2.3
Cis-1,2-Dichloroethene	5 (S)*	70	40	20	21	19	1.0 U
1,4-Dichlorobenzene	5 (S)*	75	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5 (S)*	5	64	14	14	42 J	1.0 U
Trichloroethene	5 (S)*	5	8.0	3.7	3.5	6.9 J	1.0 U

Compound	NYSDEC	U.S. EPA	OW-13R	OW-18	OW-19	OW-24
	SGV	MCL	09/21/21	09/21/21	09/21/21	09/21/21
Benzene	1 (S)	5	2.5	3.9	1.0 U	1.0 U
Chlorobenzene	5 (S)*	100	1.0 U	18	7.1	1.0 U
Cis-1,2-Dichloroethene	5 (S)*	70	1.0 U	1.0 U	1.1	1.0 U
1,4-Dichlorobenzene	5 (S)*	75	1.0 U	1.2	1.0 U	1.0 U
Tetrachloroethene	5 (S)*	5	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5 (S)*	5	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

TCL = Target Compound List

NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) Values (V) for groundwater.

U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater.

J = Estimated result

U = The analyte was analyzed for, but was not detected above the reported quantitation limit.

* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.

Red = Concentrations detected above regulatory limit

Blue = Analyte detected at or below the regulatory limit, or analyte detected but no regulatory criteria specified

Table 4
MCL and SGV Exceedances - 1999, 2004, and 2011 through 2021
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well	Compound	MCL ug/L	SGV ug/L	1999		2004		Oct-11		Feb-13		Jun-14		Sep-15		Nov-16		Mar-18		Jun-19		Sep-21	
				MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV
OW-2	Benzene	5	1				X																
	Tetrachloroethene (PCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Trichloroethene (TCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	1,2-Dichloroethene (1,2-DCE)	70	5	X	X	X	X	X	X	X	X		X		X		X		X		X		X
OW-5	Tetrachloroethene (PCE)	5	5	X	X	X	X							X	X	X	X	X	X	X	X	X	X
	Trichloroethene (TCE)	5	5	X	X											X	X						
	1,2-Dichloroethene (1,2-DCE)	70	5		X		X						X		X		X		X				X
OW-6	Acetone	NE ⁽³⁾	50															X					
	Tetrachloroethene (PCE)	5	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Trichloroethene (TCE)	5	5			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	1,2-Dichloroethene	70	5		X		X		X		X		X		X		X		X		X		X
OW-10R ⁽¹⁾	Benzene	5	1	X	X	X	X		X		X	Dry	Dry		X		X		X		X		X
	Chlorobenzene	100	5		X				X		X												
	Methylene chloride	5	5	X	X																		
	Toluene	1,000	5		X																		

Table 4
MCL and SGV Exceedances - 1999, 2004, and 2011 through 2021
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well	Compound	MCL ug/L	SGV ug/L	1999		2004		Oct-11		Feb-13		Jun-14		Sep-15		Nov-16		Mar-18		Jun-19		Sep-21	
				MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV	MCL	SGV
OW-13 / OW-13R ⁽²⁾	Benzene	5	1	X	X	X	X			X	X	X	X	X	X		X		X		X		X
	1,2-Dichloroethene (1,2-DCE)	70	5		X																		
	Methylene chloride	5	5	X	X																		
	Toluene	1,000	5		X																		
	Vinyl chloride	2	2	X	X	X	X																
OW-18	Benzene	5	1		X		X		X		X		X		X	X	X		X		X		X
	Chlorobenzene	100	5				X		X		X		X		X		X		X		X		X
	Xylenes (total)	10	5																				
OW-19	Benzene	5	1	X	X		X		X	X	X		X					X		X			
	Chlorobenzene	100	5		X		X		X		X		X		X		X		X		X		X
	Chloroethane	NE ⁽³⁾	5		X																		
	Vinyl chloride	2	2	X	X			X	X	X	X												
Total				13	22	9	16	6	13	8	14	5	12	6	13	7	14	5	15	5	13	5	13

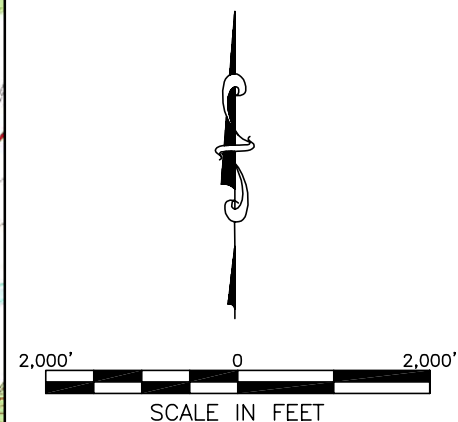
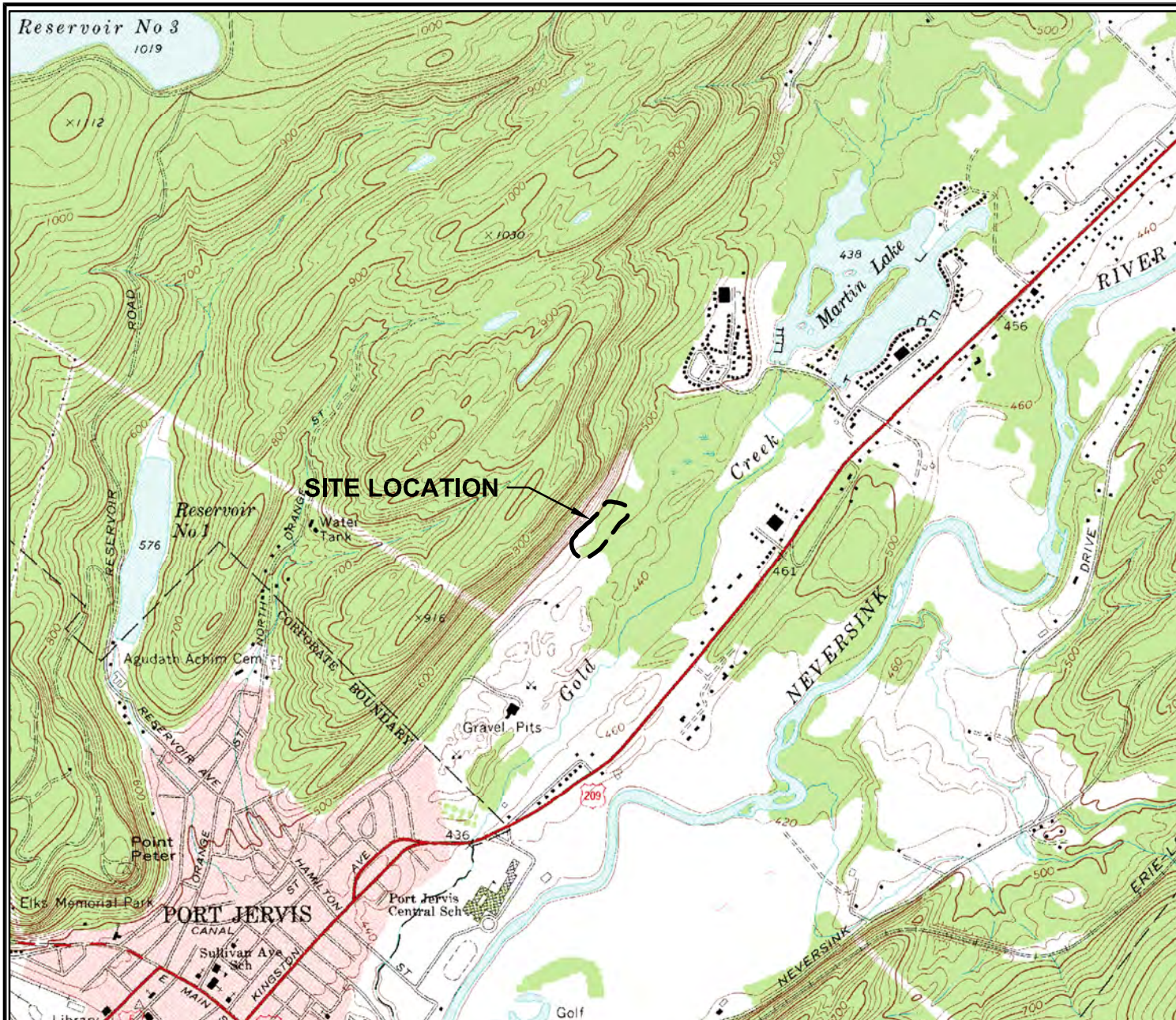
Notes:

⁽¹⁾OW-10 was replaced with OW-10R in 2000. OW-10 was abandoned because it was within the OU1 construction area.

⁽²⁾OW-13R was installed in February 2006 to replace OW-13.

⁽³⁾ NE = Not established

Figures



LEGEND:

--- APPROXIMATE
SITE BOUNDARY

SOURCE:
USGS TOPOGRAPHIC QUADRANGLE MAP
PORT JERVIS NORTH, NEW YORK, DATED 1991.



CARROLL AND DUBIES SUPERFUND SITE TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK

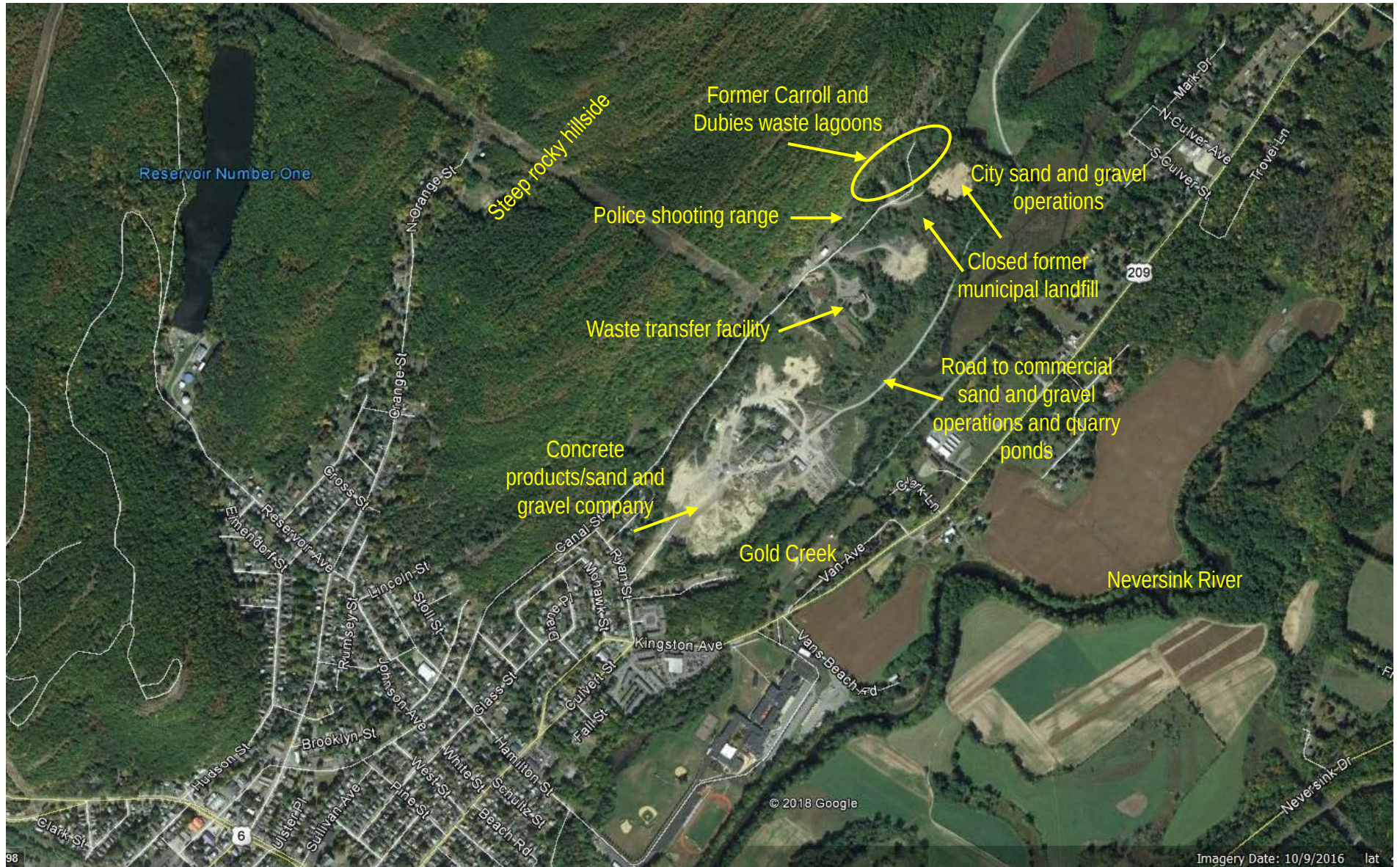
105-0035

FIGURE 1

SITE LOCATION MAP

1									
0	ECM								
NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE		

CADD FILE	9005	SCALE	AS NOTED	CURRENT DATE	03-07-2005
DRAWING NO.	105-0035-0300-01	REVISION			0



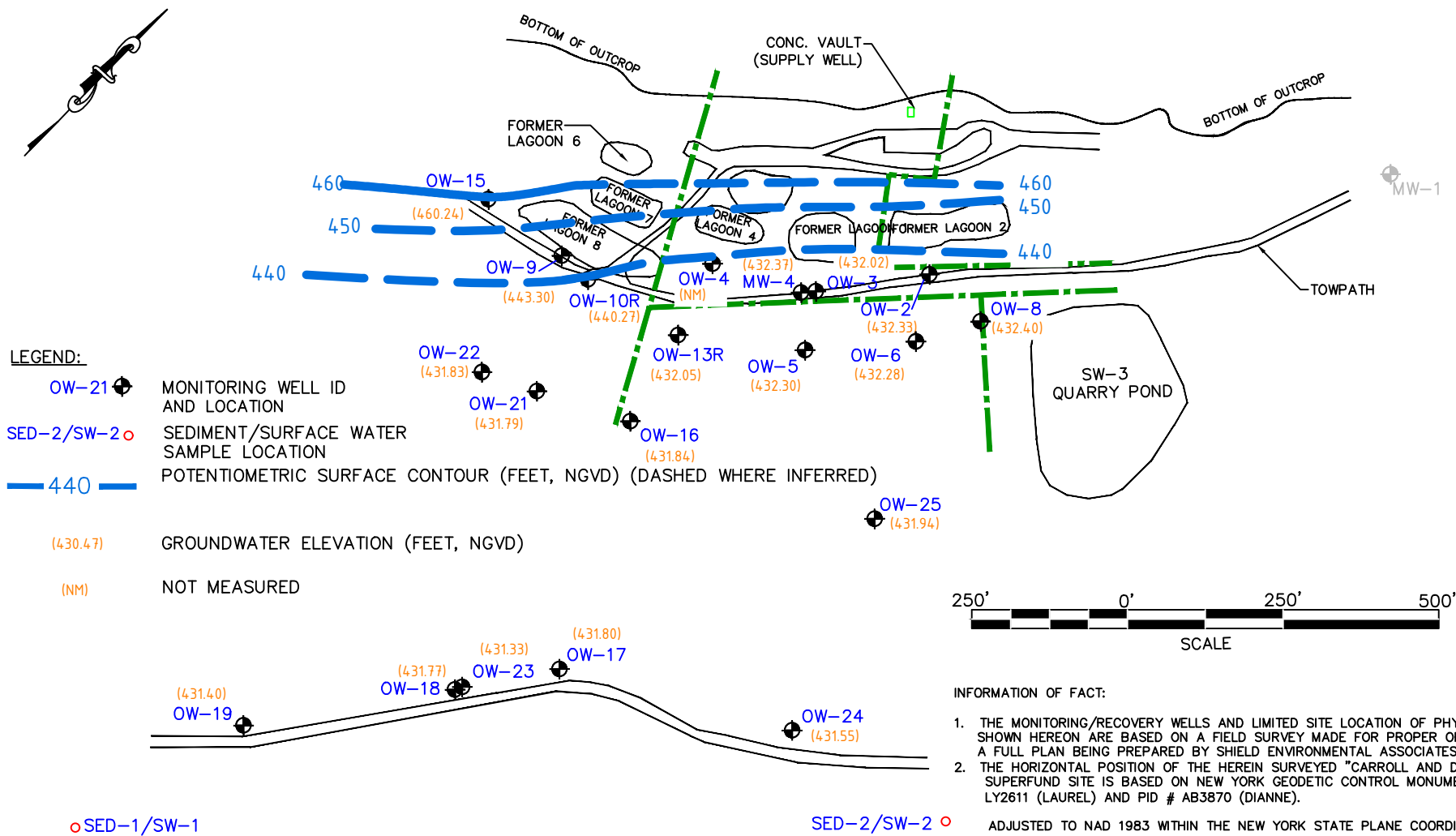
6									
5									
4									
3									
2									
1									
0									
NO	DRWN	DATE	INITIAL ISSUE	REVISION	CHKD	DATE	APPVD	DATE	

Carroll and Dubies Superfund Site
Town of Deerpark,
Orange County, New York

Figure 2
Land and Resource Use



DATE	October 20, 2021	FILE		DWG NO.		SCALE		REVISION	0
------	------------------	------	--	---------	--	-------	--	----------	---



CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
104-0012

FIGURE 3
GROUNDWATER ELEVATION CONTOURS
SEPTEMBER 2021

CARDINAL

CURRENT DATE 10-14-2021

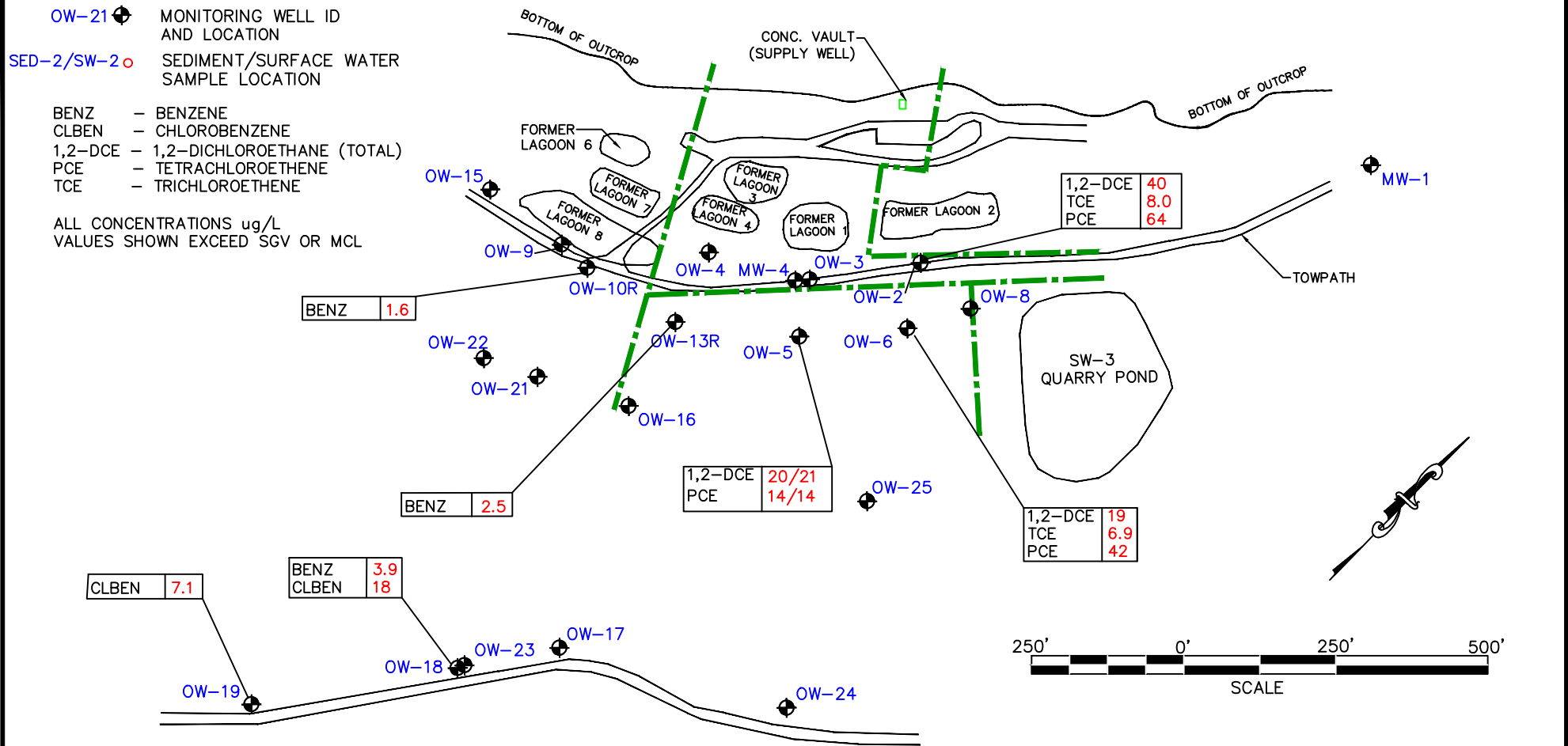
BJ

DRAWING NO. 104-0012 - C&D OU2\SEPT 2021

SCALE

AS NOTED

REVISION



SED-1/SW-1

SED-2/SW-2

INFORMATION OF FACT:

1. THE MONITORING/RECOVERY WELLS AND LIMITED SITE LOCATION OF PHYSICAL FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY MADE FOR PROPER ORIENTATION WITH A FULL PLAN BEING PREPARED BY SHIELD ENVIRONMENTAL ASSOCIATES, INC.
2. THE HORIZONTAL POSITION OF THE HEREIN SURVEYED "CARROLL AND DUBIES" SUPERFUND SITE IS BASED ON NEW YORK GEODETIC CONTROL MONUMENTS PID # LY2611 (LAUREL) AND PID # AB3870 (DIANNE).

ADJUSTED TO NAD 1983 WITHIN THE NEW YORK STATE PLANE COORDINATE SYSTEM.

NOTE: THE OUTLINES OF THE FORMER LAGOONS ARE BASED ON THE ACTUAL EXCAVATION.

SOURCES: MASTER CONSULTING P.A. MONITORING WELL LOCATION PLAN. INDEXN). SU0009, MARCH 3, 1999.

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
104-0012

FIGURE 4
VOLATILE ORGANIC COMPOUND EXCEEDANCES
IN GROUNDWATER
SEPTEMBER 2021

CARDINAL

CURRENT DATE 10-14-2021

BJ

DRAWING NO. 104-0012-0300-09 SEPT 2021

SCALE

AS NOTED

REVISION

Appendix A
Laboratory Report with Marked Form Is from Data Review

ANALYTICAL REPORT

Eurofins TestAmerica, Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

Laboratory Job ID: 240-156932-1
Client Project/Site: Carroll & Dubies

For:

Cardinal Resources
4410 Broadway Blvd
Monroeville, Pennsylvania 15146

Attn: Barbara Jones



Authorized for release by:
10/8/2021 8:35:31 AM

Nicole Kalis, Project Manager I
(330)497-9396
Nicole.Kalis@Eurofinset.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	9
Surrogate Summary	33
QC Sample Results	34
QC Association Summary	47
Lab Chronicle	48
Certification Summary	50
Chain of Custody	51



Definitions/Glossary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Job ID: 240-156932-1

Laboratory: Eurofins TestAmerica, Canton

Narrative

Job Narrative 240-156932-1

Comments

No additional comments.

Receipt

The samples were received on 9/27/2021 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 17.5° C.

GC/MS VOA

Method 8260B: NO MS/MSD in batch 506309 due to an instrument failure. OW-24 (240-156932-1), OW-18 (240-156932-2), OW-19 (240-156932-3), OW-10R (240-156932-4), TRIP BLANK (240-156932-5), OW-13R (240-156932-6), PUMP RINSATE BLANK (240-156932-7) and OW-5 (240-156932-8)

Method 8260B: The Laboratory Control Sample (LCS) for analytical batch 506309 exceeded control criteria for multiple compounds. The samples associated with this LCS were non-detect for the affected analytes. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compounds were detected; therefore the data has been reported. No further corrective action was required. OW-5 (240-156932-8)

Method 8260B: This sample is over range for Tetrachloroethene but is reported due to insufficient sample. This compound is flagged with an "E". It had been analyzed the day before but there was an instrument failure and sample was consumed. OW-6 (240-156932-11)

Method 8260B: The continuing calibration verification (CCV) associated with batch 506962 recovered above the upper control limit for 1,2-Dichloropropane. The samples associated with this CCV were non-detect for the affected analyte; therefore, the data have been reported. The associated sample is impacted: OW-2 (240-156932-12).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Sample Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-156932-1	OW-24	Water	09/21/21 08:35	09/27/21 09:00
240-156932-2	OW-18	Water	09/21/21 09:55	09/27/21 09:00
240-156932-3	OW-19	Water	09/21/21 11:15	09/27/21 09:00
240-156932-4	OW-10R	Water	09/21/21 13:35	09/27/21 09:00
240-156932-5	TRIP BLANK	Water	09/21/21 14:05	09/27/21 09:00
240-156932-6	OW-13R	Water	09/21/21 14:25	09/27/21 09:00
240-156932-7	PUMP RINSATE BLANK	Water	09/21/21 14:45	09/27/21 09:00
240-156932-8	OW-5	Water	09/21/21 16:05	09/27/21 09:00
240-156932-9	OW-5 DUP	Water	09/21/21 16:06	09/27/21 09:00
240-156932-10	FIELD BLANK	Water	09/21/21 16:20	09/27/21 09:00
240-156932-11	OW-6	Water	09/22/21 10:35	09/27/21 09:00
240-156932-12	OW-2	Water	09/22/21 11:20	09/27/21 09:00

Detection Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-24

Lab Sample ID: 240-156932-1

No Detections.

Client Sample ID: OW-18

Lab Sample ID: 240-156932-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.2		1.0	ug/L	1		8260B	Total/NA
Benzene	3.9		1.0	ug/L	1		8260B	Total/NA
Chlorobenzene	18		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: OW-19

Lab Sample ID: 240-156932-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	7.1		1.0	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	1.1		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: OW-10R

Lab Sample ID: 240-156932-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.6		1.0	ug/L	1		8260B	Total/NA
Chlorobenzene	2.3		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-156932-5

No Detections.

Client Sample ID: OW-13R

Lab Sample ID: 240-156932-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.5		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: PUMP RINSATE BLANK

Lab Sample ID: 240-156932-7

No Detections.

Client Sample ID: OW-5

Lab Sample ID: 240-156932-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	20		1.0	ug/L	1		8260B	Total/NA
Tetrachloroethene	14		1.0	ug/L	1		8260B	Total/NA
Trichloroethene	3.7		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: OW-5 DUP

Lab Sample ID: 240-156932-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	21		1.0	ug/L	1		8260B	Total/NA
Tetrachloroethene	14		1.0	ug/L	1		8260B	Total/NA
Trichloroethene	3.5		1.0	ug/L	1		8260B	Total/NA

Client Sample ID: FIELD BLANK

Lab Sample ID: 240-156932-10

No Detections.

Client Sample ID: OW-6

Lab Sample ID: 240-156932-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	19		1.0	ug/L	1		8260B	Total/NA
Tetrachloroethene	42	E	1.0	ug/L	1		8260B	Total/NA
Trichloroethene	6.9	F1	1.0	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Detection Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-2

Lab Sample ID: 240-156932-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	40		1.0	ug/L	1		8260B	Total/NA
Tetrachloroethene	64		3.3	ug/L	3.33		8260B	Total/NA
Trichloroethene	8.0		1.0	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

BH9
10-19-21

Job ID: 240-156932-1

Client Sample ID: OW-24

Lab Sample ID: 240-156932-1

Date Collected: 09/21/21 08:35

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 14:10	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 14:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	UJ (LCS)	1.0	ug/L			10/01/21 14:10	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 14:10	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 14:10	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 14:10	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 14:10	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 14:10	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:10	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 14:10	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 14:10	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:10	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:10	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 14:10	1
2-Hexanone	ND		10	ug/L			10/01/21 14:10	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 14:10	1
Acetone	ND		10	ug/L			10/01/21 14:10	1
Benzene	ND		1.0	ug/L			10/01/21 14:10	1
Bromoform	ND		1.0	ug/L			10/01/21 14:10	1
Bromomethane	ND		1.0	ug/L			10/01/21 14:10	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 14:10	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 14:10	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 14:10	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 14:10	1
Chloroethane	ND		1.0	ug/L			10/01/21 14:10	1
Chloroform	ND		1.0	ug/L			10/01/21 14:10	1
Chloromethane	ND		1.0	ug/L			10/01/21 14:10	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 14:10	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:10	1
Cyclohexane	ND	UJ (LCS)	1.0	ug/L			10/01/21 14:10	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 14:10	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 14:10	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 14:10	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 14:10	1
Methyl acetate	ND		10	ug/L			10/01/21 14:10	1
Methylcyclohexane	ND	UJ (LCS)	1.0	ug/L			10/01/21 14:10	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 14:10	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 14:10	1
Styrene	ND		1.0	ug/L			10/01/21 14:10	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 14:10	1
Toluene	ND		1.0	ug/L			10/01/21 14:10	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 14:10	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:10	1
Trichloroethene	ND		1.0	ug/L			10/01/21 14:10	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 14:10	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 14:10	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 14:10	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 14:10	1

8

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-24

Lab Sample ID: 240-156932-1

Date Collected: 09/21/21 08:35

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	90		78 - 122		10/01/21 14:10	1
Dibromofluoromethane (Surr)	91		73 - 120		10/01/21 14:10	1
4-Bromofluorobenzene (Surr)	86		56 - 136		10/01/21 14:10	1
1,2-Dichloroethane-d4 (Surr)	102		62 - 137		10/01/21 14:10	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

BN9
10-19-21

Job ID: 240-156932-1

Client Sample ID: OW-18

Lab Sample ID: 240-156932-2

Date Collected: 09/21/21 09:55

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 14:32	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 14:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	uJ(LCS)	1.0	ug/L			10/01/21 14:32	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 14:32	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 14:32	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 14:32	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 14:32	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 14:32	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:32	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 14:32	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 14:32	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:32	1
1,4-Dichlorobenzene	1.2		1.0	ug/L			10/01/21 14:32	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 14:32	1
2-Hexanone	ND		10	ug/L			10/01/21 14:32	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 14:32	1
Acetone	ND		10	ug/L			10/01/21 14:32	1
Benzene	3.9		1.0	ug/L			10/01/21 14:32	1
Bromoform	ND		1.0	ug/L			10/01/21 14:32	1
Bromomethane	ND		1.0	ug/L			10/01/21 14:32	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 14:32	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 14:32	1
Chlorobenzene	18		1.0	ug/L			10/01/21 14:32	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 14:32	1
Chloroethane	ND		1.0	ug/L			10/01/21 14:32	1
Chloroform	ND		1.0	ug/L			10/01/21 14:32	1
Chloromethane	ND		1.0	ug/L			10/01/21 14:32	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 14:32	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:32	1
Cyclohexane	ND	uJ(LCS)	1.0	ug/L			10/01/21 14:32	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 14:32	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 14:32	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 14:32	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 14:32	1
Methyl acetate	ND		10	ug/L			10/01/21 14:32	1
Methylcyclohexane	ND	uJ(LCS)	1.0	ug/L			10/01/21 14:32	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 14:32	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 14:32	1
Styrene	ND		1.0	ug/L			10/01/21 14:32	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 14:32	1
Toluene	ND		1.0	ug/L			10/01/21 14:32	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 14:32	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:32	1
Trichloroethene	ND		1.0	ug/L			10/01/21 14:32	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 14:32	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 14:32	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 14:32	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 14:32	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-18

Lab Sample ID: 240-156932-2

Date Collected: 09/21/21 09:55

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>DII Fac</u>
<i>Toluene-d8 (Surr)</i>	89		78 - 122		10/01/21 14:32	1
<i>Dibromofluoromethane (Surr)</i>	90		73 - 120		10/01/21 14:32	1
<i>4-Bromofluorobenzene (Surr)</i>	91		56 - 136		10/01/21 14:32	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		62 - 137		10/01/21 14:32	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-19

Lab Sample ID: 240-156932-3

Date Collected: 09/21/21 11:15

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 14:54	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 14:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	*- uJ (LCS)	1.0	ug/L			10/01/21 14:54	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 14:54	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 14:54	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 14:54	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 14:54	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 14:54	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:54	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 14:54	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 14:54	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:54	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 14:54	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 14:54	1
2-Hexanone	ND		10	ug/L			10/01/21 14:54	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 14:54	1
Acetone	ND		10	ug/L			10/01/21 14:54	1
Benzene	ND		1.0	ug/L			10/01/21 14:54	1
Bromoform	ND		1.0	ug/L			10/01/21 14:54	1
Bromomethane	ND		1.0	ug/L			10/01/21 14:54	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 14:54	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 14:54	1
Chlorobenzene	7.1		1.0	ug/L			10/01/21 14:54	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 14:54	1
Chloroethane	ND		1.0	ug/L			10/01/21 14:54	1
Chloroform	ND		1.0	ug/L			10/01/21 14:54	1
Chloromethane	ND		1.0	ug/L			10/01/21 14:54	1
cis-1,2-Dichloroethene	1.1		1.0	ug/L			10/01/21 14:54	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:54	1
Cyclohexane	ND	*- uJ (LCS)	1.0	ug/L			10/01/21 14:54	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 14:54	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 14:54	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 14:54	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 14:54	1
Methyl acetate	ND		10	ug/L			10/01/21 14:54	1
Methylcyclohexane	ND	*- uJ (LCS)	1.0	ug/L			10/01/21 14:54	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 14:54	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 14:54	1
Styrene	ND		1.0	ug/L			10/01/21 14:54	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 14:54	1
Toluene	ND		1.0	ug/L			10/01/21 14:54	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 14:54	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 14:54	1
Trichloroethene	ND		1.0	ug/L			10/01/21 14:54	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 14:54	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 14:54	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 14:54	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 14:54	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-19

Lab Sample ID: 240-156932-3

Date Collected: 09/21/21 11:15

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	90		78 - 122		10/01/21 14:54	1
Dibromofluoromethane (Surr)	91		73 - 120		10/01/21 14:54	1
4-Bromofluorobenzene (Surr)	90		56 - 136		10/01/21 14:54	1
1,2-Dichloroethane-d4 (Surr)	102		62 - 137		10/01/21 14:54	1



Eurofins TestAmerica, Canton

BNG 10-19-21

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-10R

Lab Sample ID: 240-156932-4

Date Collected: 09/21/21 13:35

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 15:16	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 15:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	uT (LCS)	1.0	ug/L			10/01/21 15:16	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 15:16	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 15:16	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 15:16	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 15:16	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 15:16	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:16	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 15:16	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 15:16	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:16	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:16	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 15:16	1
2-Hexanone	ND		10	ug/L			10/01/21 15:16	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 15:16	1
Acetone	ND		10	ug/L			10/01/21 15:16	1
Benzene	1.6		1.0	ug/L			10/01/21 15:16	1
Bromoform	ND		1.0	ug/L			10/01/21 15:16	1
Bromomethane	ND		1.0	ug/L			10/01/21 15:16	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 15:16	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 15:16	1
Chlorobenzene	2.3		1.0	ug/L			10/01/21 15:16	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 15:16	1
Chloroethane	ND		1.0	ug/L			10/01/21 15:16	1
Chloroform	ND		1.0	ug/L			10/01/21 15:16	1
Chloromethane	ND		1.0	ug/L			10/01/21 15:16	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 15:16	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 15:16	1
Cyclohexane	ND	uT (LCS)	1.0	ug/L			10/01/21 15:16	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 15:16	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 15:16	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 15:16	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 15:16	1
Methyl acetate	ND		10	ug/L			10/01/21 15:16	1
Methylcyclohexane	ND	uT (LCS)	1.0	ug/L			10/01/21 15:16	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 15:16	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 15:16	1
Styrene	ND		1.0	ug/L			10/01/21 15:16	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 15:16	1
Toluene	ND		1.0	ug/L			10/01/21 15:16	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 15:16	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 15:16	1
Trichloroethene	ND		1.0	ug/L			10/01/21 15:16	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 15:16	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 15:16	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 15:16	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 15:16	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-10R

Lab Sample ID: 240-156932-4

Date Collected: 09/21/21 13:35

Matrix: Water

Date Received: 09/27/21 09:00

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	89		78 - 122		10/01/21 15:16	1
<i>Dibromofluoromethane (Surr)</i>	88		73 - 120		10/01/21 15:16	1
<i>4-Bromofluorobenzene (Surr)</i>	89		56 - 136		10/01/21 15:16	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	101		62 - 137		10/01/21 15:16	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-156932-5

Date Collected: 09/21/21 14:05

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 15:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 15:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	*-	1.0	ug/L			10/01/21 15:38	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 15:38	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 15:38	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 15:38	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 15:38	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 15:38	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:38	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 15:38	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 15:38	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:38	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 15:38	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 15:38	1
2-Hexanone	ND		10	ug/L			10/01/21 15:38	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 15:38	1
Acetone	ND		10	ug/L			10/01/21 15:38	1
Benzene	ND		1.0	ug/L			10/01/21 15:38	1
Bromoform	ND		1.0	ug/L			10/01/21 15:38	1
Bromomethane	ND		1.0	ug/L			10/01/21 15:38	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 15:38	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 15:38	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 15:38	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 15:38	1
Chloroethane	ND		1.0	ug/L			10/01/21 15:38	1
Chloroform	ND		1.0	ug/L			10/01/21 15:38	1
Chloromethane	ND		1.0	ug/L			10/01/21 15:38	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 15:38	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 15:38	1
Cyclohexane	ND	*-	1.0	ug/L			10/01/21 15:38	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 15:38	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 15:38	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 15:38	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 15:38	1
Methyl acetate	ND		10	ug/L			10/01/21 15:38	1
Methylcyclohexane	ND	*-	1.0	ug/L			10/01/21 15:38	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 15:38	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 15:38	1
Styrene	ND		1.0	ug/L			10/01/21 15:38	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 15:38	1
Toluene	ND		1.0	ug/L			10/01/21 15:38	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 15:38	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 15:38	1
Trichloroethene	ND		1.0	ug/L			10/01/21 15:38	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 15:38	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 15:38	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 15:38	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 15:38	1

8

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-156932-5

Date Collected: 09/21/21 14:05

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	90		78 - 122		10/01/21 15:38	1
Dibromofluoromethane (Surr)	91		73 - 120		10/01/21 15:38	1
4-Bromofluorobenzene (Surr)	91		56 - 136		10/01/21 15:38	1
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		10/01/21 15:38	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-13R

Lab Sample ID: 240-156932-6

Date Collected: 09/21/21 14:25

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 16:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 16:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	uJ (LCS)	1.0	ug/L			10/01/21 16:00	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 16:00	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 16:00	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 16:00	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 16:00	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 16:00	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:00	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 16:00	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 16:00	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:00	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:00	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 16:00	1
2-Hexanone	ND		10	ug/L			10/01/21 16:00	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 16:00	1
Acetone	ND		10	ug/L			10/01/21 16:00	1
Benzene	2.5		1.0	ug/L			10/01/21 16:00	1
Bromoform	ND		1.0	ug/L			10/01/21 16:00	1
Bromomethane	ND		1.0	ug/L			10/01/21 16:00	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 16:00	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 16:00	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 16:00	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 16:00	1
Chloroethane	ND		1.0	ug/L			10/01/21 16:00	1
Chloroform	ND		1.0	ug/L			10/01/21 16:00	1
Chloromethane	ND		1.0	ug/L			10/01/21 16:00	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 16:00	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:00	1
Cyclohexane	ND	uJ (LCS)	1.0	ug/L			10/01/21 16:00	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 16:00	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 16:00	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 16:00	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 16:00	1
Methyl acetate	ND		10	ug/L			10/01/21 16:00	1
Methylcyclohexane	ND	uJ (LCS)	1.0	ug/L			10/01/21 16:00	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 16:00	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 16:00	1
Styrene	ND		1.0	ug/L			10/01/21 16:00	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 16:00	1
Toluene	ND		1.0	ug/L			10/01/21 16:00	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 16:00	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:00	1
Trichloroethene	ND		1.0	ug/L			10/01/21 16:00	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 16:00	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 16:00	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 16:00	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 16:00	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-13R

Lab Sample ID: 240-156932-6

Date Collected: 09/21/21 14:25

Matrix: Water

Date Received: 09/27/21 09:00

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	89		78 - 122		10/01/21 16:00	1
<i>Dibromofluoromethane (Surr)</i>	89		73 - 120		10/01/21 16:00	1
<i>4-Bromofluorobenzene (Surr)</i>	89		56 - 136		10/01/21 16:00	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		62 - 137		10/01/21 16:00	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: PUMP RINSATE BLANK

Lab Sample ID: 240-156932-7

Date Collected: 09/21/21 14:45

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 16:22	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 16:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	uJ (LCS)	1.0	ug/L			10/01/21 16:22	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 16:22	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 16:22	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 16:22	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 16:22	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 16:22	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:22	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 16:22	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 16:22	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:22	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:22	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 16:22	1
2-Hexanone	ND		10	ug/L			10/01/21 16:22	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 16:22	1
Acetone	ND		10	ug/L			10/01/21 16:22	1
Benzene	ND		1.0	ug/L			10/01/21 16:22	1
Bromoform	ND		1.0	ug/L			10/01/21 16:22	1
Bromomethane	ND		1.0	ug/L			10/01/21 16:22	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 16:22	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 16:22	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 16:22	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 16:22	1
Chloroethane	ND		1.0	ug/L			10/01/21 16:22	1
Chloroform	ND		1.0	ug/L			10/01/21 16:22	1
Chloromethane	ND		1.0	ug/L			10/01/21 16:22	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 16:22	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:22	1
Cyclohexane	ND	uJ (LCS)	1.0	ug/L			10/01/21 16:22	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 16:22	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 16:22	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 16:22	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 16:22	1
Methyl acetate	ND	uJ (LCS)	10	ug/L			10/01/21 16:22	1
Methylcyclohexane	ND		1.0	ug/L			10/01/21 16:22	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 16:22	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 16:22	1
Styrene	ND		1.0	ug/L			10/01/21 16:22	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 16:22	1
Toluene	ND		1.0	ug/L			10/01/21 16:22	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 16:22	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:22	1
Trichloroethene	ND		1.0	ug/L			10/01/21 16:22	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 16:22	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 16:22	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 16:22	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 16:22	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: PUMP RINSATE BLANK

Lab Sample ID: 240-156932-7

Date Collected: 09/21/21 14:45

Matrix: Water

Date Received: 09/27/21 09:00

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	91		78 - 122		10/01/21 16:22	1
<i>Dibromofluoromethane (Surr)</i>	90		73 - 120		10/01/21 16:22	1
<i>4-Bromofluorobenzene (Surr)</i>	91		56 - 136		10/01/21 16:22	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	100		62 - 137		10/01/21 16:22	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-5

Lab Sample ID: 240-156932-8

Date Collected: 09/21/21 16:05

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 16:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 16:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	UT (LCS)	1.0	ug/L			10/01/21 16:44	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 16:44	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 16:44	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 16:44	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 16:44	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 16:44	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:44	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 16:44	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 16:44	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:44	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 16:44	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 16:44	1
2-Hexanone	ND		10	ug/L			10/01/21 16:44	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 16:44	1
Acetone	ND		10	ug/L			10/01/21 16:44	1
Benzene	ND		1.0	ug/L			10/01/21 16:44	1
Bromoform	ND		1.0	ug/L			10/01/21 16:44	1
Bromomethane	ND		1.0	ug/L			10/01/21 16:44	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 16:44	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 16:44	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 16:44	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 16:44	1
Chloroethane	ND		1.0	ug/L			10/01/21 16:44	1
Chloroform	ND		1.0	ug/L			10/01/21 16:44	1
Chloromethane	ND		1.0	ug/L			10/01/21 16:44	1
cis-1,2-Dichloroethene	20		1.0	ug/L			10/01/21 16:44	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:44	1
Cyclohexane	ND	UT (LCS)	1.0	ug/L			10/01/21 16:44	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 16:44	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 16:44	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 16:44	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 16:44	1
Methyl acetate	ND		10	ug/L			10/01/21 16:44	1
Methylcyclohexane	ND	UT (LCS)	1.0	ug/L			10/01/21 16:44	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 16:44	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 16:44	1
Styrene	ND		1.0	ug/L			10/01/21 16:44	1
Tetrachloroethene	14		1.0	ug/L			10/01/21 16:44	1
Toluene	ND		1.0	ug/L			10/01/21 16:44	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 16:44	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 16:44	1
Trichloroethene	3.7		1.0	ug/L			10/01/21 16:44	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 16:44	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 16:44	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 16:44	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 16:44	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-5

Lab Sample ID: 240-156932-8

Date Collected: 09/21/21 16:05

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	90		78 - 122		10/01/21 16:44	1
Dibromofluoromethane (Surr)	91		73 - 120		10/01/21 16:44	1
4-Bromofluorobenzene (Surr)	90		56 - 136		10/01/21 16:44	1
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		10/01/21 16:44	1

8

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-5 DUP

Lab Sample ID: 240-156932-9

Date Collected: 09/21/21 16:06

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,1-Dichloroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,1-Dichloroethene	ND		1.0	ug/L			10/04/21 16:23	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/04/21 16:23	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/04/21 16:23	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:23	1
1,2-Dichloroethane	ND		1.0	ug/L			10/04/21 16:23	1
1,2-Dichloropropane	ND		1.0	ug/L			10/04/21 16:23	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:23	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:23	1
2-Butanone (MEK)	ND		10	ug/L			10/04/21 16:23	1
2-Hexanone	ND		10	ug/L			10/04/21 16:23	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/04/21 16:23	1
Acetone	ND		10	ug/L			10/04/21 16:23	1
Benzene	ND		1.0	ug/L			10/04/21 16:23	1
Bromoform	ND		1.0	ug/L			10/04/21 16:23	1
Bromomethane	ND		1.0	ug/L			10/04/21 16:23	1
Carbon disulfide	ND		1.0	ug/L			10/04/21 16:23	1
Carbon tetrachloride	ND		1.0	ug/L			10/04/21 16:23	1
Chlorobenzene	ND		1.0	ug/L			10/04/21 16:23	1
Chlorodibromomethane	ND		1.0	ug/L			10/04/21 16:23	1
Chloroethane	ND		1.0	ug/L			10/04/21 16:23	1
Chloroform	ND		1.0	ug/L			10/04/21 16:23	1
Chloromethane	ND		1.0	ug/L			10/04/21 16:23	1
cis-1,2-Dichloroethene	21		1.0	ug/L			10/04/21 16:23	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 16:23	1
Cyclohexane	ND		1.0	ug/L			10/04/21 16:23	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/04/21 16:23	1
Dichlorobromomethane	ND		1.0	ug/L			10/04/21 16:23	1
Ethylbenzene	ND		1.0	ug/L			10/04/21 16:23	1
Isopropylbenzene	ND		1.0	ug/L			10/04/21 16:23	1
Methyl acetate	ND		10	ug/L			10/04/21 16:23	1
Methylcyclohexane	ND		1.0	ug/L			10/04/21 16:23	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/04/21 16:23	1
Methylene Chloride	ND		5.0	ug/L			10/04/21 16:23	1
Styrene	ND		1.0	ug/L			10/04/21 16:23	1
Tetrachloroethene	14		1.0	ug/L			10/04/21 16:23	1
Toluene	ND		1.0	ug/L			10/04/21 16:23	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 16:23	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 16:23	1
Trichloroethene	3.5		1.0	ug/L			10/04/21 16:23	1
Trichlorofluoromethane	ND		1.0	ug/L			10/04/21 16:23	1
Vinyl chloride	ND		1.0	ug/L			10/04/21 16:23	1
Xylenes, Total	ND		2.0	ug/L			10/04/21 16:23	1
Ethylene Dibromide	ND		1.0	ug/L			10/04/21 16:23	1

8

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-5 DUP

Lab Sample ID: 240-156932-9

Date Collected: 09/21/21 16:06

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
<i>Toluene-d8 (Surr)</i>	86		78 - 122		10/04/21 16:23	1
<i>Dibromofluoromethane (Surr)</i>	85		73 - 120		10/04/21 16:23	1
<i>4-Bromofluorobenzene (Surr)</i>	71		56 - 136		10/04/21 16:23	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	81		62 - 137		10/04/21 16:23	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 240-156932-10

Date Collected: 09/21/21 16:20

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,1-Dichloroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,1-Dichloroethene	ND		1.0	ug/L			10/04/21 16:46	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/04/21 16:46	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/04/21 16:46	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:46	1
1,2-Dichloroethane	ND		1.0	ug/L			10/04/21 16:46	1
1,2-Dichloropropane	ND		1.0	ug/L			10/04/21 16:46	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:46	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/04/21 16:46	1
2-Butanone (MEK)	ND		10	ug/L			10/04/21 16:46	1
2-Hexanone	ND		10	ug/L			10/04/21 16:46	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/04/21 16:46	1
Acetone	ND		10	ug/L			10/04/21 16:46	1
Benzene	ND		1.0	ug/L			10/04/21 16:46	1
Bromoform	ND		1.0	ug/L			10/04/21 16:46	1
Bromomethane	ND		1.0	ug/L			10/04/21 16:46	1
Carbon disulfide	ND		1.0	ug/L			10/04/21 16:46	1
Carbon tetrachloride	ND		1.0	ug/L			10/04/21 16:46	1
Chlorobenzene	ND		1.0	ug/L			10/04/21 16:46	1
Chlorodibromomethane	ND		1.0	ug/L			10/04/21 16:46	1
Chloroethane	ND		1.0	ug/L			10/04/21 16:46	1
Chloroform	ND		1.0	ug/L			10/04/21 16:46	1
Chloromethane	ND		1.0	ug/L			10/04/21 16:46	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 16:46	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 16:46	1
Cyclohexane	ND		1.0	ug/L			10/04/21 16:46	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/04/21 16:46	1
Dichlorobromomethane	ND		1.0	ug/L			10/04/21 16:46	1
Ethylbenzene	ND		1.0	ug/L			10/04/21 16:46	1
Isopropylbenzene	ND		1.0	ug/L			10/04/21 16:46	1
Methyl acetate	ND		10	ug/L			10/04/21 16:46	1
Methylcyclohexane	ND		1.0	ug/L			10/04/21 16:46	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/04/21 16:46	1
Methylene Chloride	ND		5.0	ug/L			10/04/21 16:46	1
Styrene	ND		1.0	ug/L			10/04/21 16:46	1
Tetrachloroethene	ND		1.0	ug/L			10/04/21 16:46	1
Toluene	ND		1.0	ug/L			10/04/21 16:46	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 16:46	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 16:46	1
Trichloroethene	ND		1.0	ug/L			10/04/21 16:46	1
Trichlorofluoromethane	ND		1.0	ug/L			10/04/21 16:46	1
Vinyl chloride	ND		1.0	ug/L			10/04/21 16:46	1
Xylenes, Total	ND		2.0	ug/L			10/04/21 16:46	1
Ethylene Dibromide	ND		1.0	ug/L			10/04/21 16:46	1

8

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: FIELD BLANK

Lab Sample ID: 240-156932-10

Date Collected: 09/21/21 16:20

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
<i>Toluene-d8 (Surr)</i>	98		78 - 122		10/04/21 16:46	1
<i>Dibromofluoromethane (Surr)</i>	94		73 - 120		10/04/21 16:46	1
<i>4-Bromofluorobenzene (Surr)</i>	83		56 - 136		10/04/21 16:46	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	91		62 - 137		10/04/21 16:46	1



Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-6

Lab Sample ID: 240-156932-11

Date Collected: 09/22/21 10:35

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/04/21 17:08	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/04/21 17:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F2	1.0	ug/L			10/04/21 17:08	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/04/21 17:08	1
1,1-Dichloroethane	ND	F2	1.0	ug/L			10/04/21 17:08	1
1,1-Dichloroethene	ND		1.0	ug/L			10/04/21 17:08	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/04/21 17:08	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/04/21 17:08	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/04/21 17:08	1
1,2-Dichloroethane	ND		1.0	ug/L			10/04/21 17:08	1
1,2-Dichloropropane	ND		1.0	ug/L			10/04/21 17:08	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/04/21 17:08	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/04/21 17:08	1
2-Butanone (MEK)	ND		10	ug/L			10/04/21 17:08	1
2-Hexanone	ND		10	ug/L			10/04/21 17:08	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/04/21 17:08	1
Acetone	ND		10	ug/L			10/04/21 17:08	1
Benzene	ND		1.0	ug/L			10/04/21 17:08	1
Bromoform	ND		1.0	ug/L			10/04/21 17:08	1
Bromomethane	ND		1.0	ug/L			10/04/21 17:08	1
Carbon disulfide	ND		1.0	ug/L			10/04/21 17:08	1
Carbon tetrachloride	ND		1.0	ug/L			10/04/21 17:08	1
Chlorobenzene	ND		1.0	ug/L			10/04/21 17:08	1
Chlorodibromomethane	ND		1.0	ug/L			10/04/21 17:08	1
Chloroethane	ND		1.0	ug/L			10/04/21 17:08	1
Chloroform	ND		1.0	ug/L			10/04/21 17:08	1
Chloromethane	ND		1.0	ug/L			10/04/21 17:08	1
cis-1,2-Dichloroethene	19		1.0	ug/L			10/04/21 17:08	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 17:08	1
Cyclohexane	ND		1.0	ug/L			10/04/21 17:08	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/04/21 17:08	1
Dichlorobromomethane	ND		1.0	ug/L			10/04/21 17:08	1
Ethylbenzene	ND		1.0	ug/L			10/04/21 17:08	1
Isopropylbenzene	ND		1.0	ug/L			10/04/21 17:08	1
Methyl acetate	ND	F2	10	ug/L			10/04/21 17:08	1
Methylcyclohexane	ND		1.0	ug/L			10/04/21 17:08	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/04/21 17:08	1
Methylene Chloride	ND		5.0	ug/L			10/04/21 17:08	1
Styrene	ND		1.0	ug/L			10/04/21 17:08	1
Tetrachloroethene	42	E	1.0	ug/L			10/04/21 17:08	1
Toluene	ND		1.0	ug/L			10/04/21 17:08	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 17:08	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 17:08	1
Trichloroethene	6.9	F1	1.0	ug/L			10/04/21 17:08	1
Trichlorofluoromethane	ND		1.0	ug/L			10/04/21 17:08	1
Vinyl chloride	ND		1.0	ug/L			10/04/21 17:08	1
Xylenes, Total	ND		2.0	ug/L			10/04/21 17:08	1
Ethylene Dibromide	ND		1.0	ug/L			10/04/21 17:08	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-6

Lab Sample ID: 240-156932-11

Date Collected: 09/22/21 10:35

Matrix: Water

Date Received: 09/27/21 09:00

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Toluene-d8 (Surr)	99		78 - 122		10/04/21 17:08	1
Dibromofluoromethane (Surr)	100		73 - 120		10/04/21 17:08	1
4-Bromofluorobenzene (Surr)	85		56 - 136		10/04/21 17:08	1
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		10/04/21 17:08	1



Client Sample Results

BK 10-19-21

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-2

Lab Sample ID: 240-156932-12

Date Collected: 09/22/21 11:20

Matrix: Water

Date Received: 09/27/21 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,1-Dichloroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,1-Dichloroethene	ND		1.0	ug/L			10/05/21 18:19	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/05/21 18:19	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/05/21 18:19	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/05/21 18:19	1
1,2-Dichloroethane	ND		1.0	ug/L			10/05/21 18:19	1
1,2-Dichloropropane	ND	UT (CCV)	1.0	ug/L			10/05/21 18:19	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/05/21 18:19	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/05/21 18:19	1
2-Butanone (MEK)	ND		10	ug/L			10/05/21 18:19	1
2-Hexanone	ND		10	ug/L			10/05/21 18:19	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/05/21 18:19	1
Acetone	ND		10	ug/L			10/05/21 18:19	1
Benzene	ND		1.0	ug/L			10/05/21 18:19	1
Bromoform	ND		1.0	ug/L			10/05/21 18:19	1
Bromomethane	ND		1.0	ug/L			10/05/21 18:19	1
Carbon disulfide	ND		1.0	ug/L			10/05/21 18:19	1
Carbon tetrachloride	ND		1.0	ug/L			10/05/21 18:19	1
Chlorobenzene	ND		1.0	ug/L			10/05/21 18:19	1
Chlorodibromomethane	ND		1.0	ug/L			10/05/21 18:19	1
Chloroethane	ND		1.0	ug/L			10/05/21 18:19	1
Chloroform	ND		1.0	ug/L			10/05/21 18:19	1
Chloromethane	ND		1.0	ug/L			10/05/21 18:19	1
cis-1,2-Dichloroethene	40		1.0	ug/L			10/05/21 18:19	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/05/21 18:19	1
Cyclohexane	ND		1.0	ug/L			10/05/21 18:19	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/05/21 18:19	1
Dichlorobromomethane	ND		1.0	ug/L			10/05/21 18:19	1
Ethylbenzene	ND		1.0	ug/L			10/05/21 18:19	1
Isopropylbenzene	ND		1.0	ug/L			10/05/21 18:19	1
Methyl acetate	ND		10	ug/L			10/05/21 18:19	1
Methylcyclohexane	ND		1.0	ug/L			10/05/21 18:19	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/05/21 18:19	1
Methylene Chloride	ND		5.0	ug/L			10/05/21 18:19	1
Styrene	ND		1.0	ug/L			10/05/21 18:19	1
Tetrachloroethene	64		3.3	ug/L			10/06/21 12:06	3.33
Toluene	ND		1.0	ug/L			10/05/21 18:19	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/05/21 18:19	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/05/21 18:19	1
Trichloroethene	8.0		1.0	ug/L			10/05/21 18:19	1
Trichlorofluoromethane	ND		1.0	ug/L			10/05/21 18:19	1
Vinyl chloride	ND		1.0	ug/L			10/05/21 18:19	1
Xylenes, Total	ND		2.0	ug/L			10/05/21 18:19	1
Ethylene Dibromide	ND		1.0	ug/L			10/05/21 18:19	1

Eurofins TestAmerica, Canton

Client Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-2

Lab Sample ID: 240-156932-12

Date Collected: 09/22/21 11:20

Matrix: Water

Date Received: 09/27/21 09:00

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Toluene-d8 (Surr)</i>	99		78 - 122		10/05/21 18:19	1
<i>Toluene-d8 (Surr)</i>	95		78 - 122		10/06/21 12:06	3.33
<i>Dibromofluoromethane (Surr)</i>	99		73 - 120		10/05/21 18:19	1
<i>Dibromofluoromethane (Surr)</i>	84		73 - 120		10/06/21 12:06	3.33
<i>4-Bromofluorobenzene (Surr)</i>	88		56 - 136		10/05/21 18:19	1
<i>4-Bromofluorobenzene (Surr)</i>	91		56 - 136		10/06/21 12:06	3.33
<i>1,2-Dichloroethane-d4 (Surr)</i>	95		62 - 137		10/05/21 18:19	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	109		62 - 137		10/06/21 12:06	3.33



Surrogate Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		TOL (78-122)	DBFM (73-120)	BFB (56-136)	DCA (62-137)
240-156932-1	OW-24	90	91	86	102
240-156932-2	OW-18	89	90	91	102
240-156932-3	OW-19	90	91	90	102
240-156932-4	OW-10R	89	88	89	101
240-156932-5	TRIP BLANK	90	91	91	101
240-156932-6	OW-13R	89	89	89	100
240-156932-7	PUMP RINSATE BLANK	91	90	91	100
240-156932-8	OW-5	90	91	90	100
240-156932-9	OW-5 DUP	86	85	71	81
240-156932-10	FIELD BLANK	98	94	83	91
240-156932-11	OW-6	99	100	85	95
240-156932-11 MS	OW-6	99	90	83	95
240-156932-11 MSD	OW-6	89	88	79	73
240-156932-12	OW-2	99	99	88	95
240-156932-12	OW-2	95	84	91	109
LCS 240-506309/4	Lab Control Sample	99	89	90	97
LCS 240-506518/4	Lab Control Sample	101	96	95	89
LCS 240-506725/4	Lab Control Sample	105	101	100	96
LCS 240-506962/4	Lab Control Sample	98	89	100	107
MB 240-506309/7	Method Blank	91	90	69	109
MB 240-506518/6	Method Blank	104	104	88	100
MB 240-506725/6	Method Blank	92	89	77	84
MB 240-506962/7	Method Blank	97	85	91	112

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-506309/7

Matrix: Water

Analysis Batch: 506309

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,1-Dichloroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,1-Dichloroethene	ND		1.0	ug/L			10/01/21 12:27	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/01/21 12:27	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/01/21 12:27	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/01/21 12:27	1
1,2-Dichloroethane	ND		1.0	ug/L			10/01/21 12:27	1
1,2-Dichloropropane	ND		1.0	ug/L			10/01/21 12:27	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/01/21 12:27	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/01/21 12:27	1
2-Butanone (MEK)	ND		10	ug/L			10/01/21 12:27	1
2-Hexanone	ND		10	ug/L			10/01/21 12:27	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/01/21 12:27	1
Acetone	ND		10	ug/L			10/01/21 12:27	1
Benzene	ND		1.0	ug/L			10/01/21 12:27	1
Bromoform	ND		1.0	ug/L			10/01/21 12:27	1
Bromomethane	ND		1.0	ug/L			10/01/21 12:27	1
Carbon disulfide	ND		1.0	ug/L			10/01/21 12:27	1
Carbon tetrachloride	ND		1.0	ug/L			10/01/21 12:27	1
Chlorobenzene	ND		1.0	ug/L			10/01/21 12:27	1
Chlorodibromomethane	ND		1.0	ug/L			10/01/21 12:27	1
Chloroethane	ND		1.0	ug/L			10/01/21 12:27	1
Chloroform	ND		1.0	ug/L			10/01/21 12:27	1
Chloromethane	ND		1.0	ug/L			10/01/21 12:27	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 12:27	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 12:27	1
Cyclohexane	ND		1.0	ug/L			10/01/21 12:27	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/01/21 12:27	1
Dichlorobromomethane	ND		1.0	ug/L			10/01/21 12:27	1
Ethylbenzene	ND		1.0	ug/L			10/01/21 12:27	1
Isopropylbenzene	ND		1.0	ug/L			10/01/21 12:27	1
Methyl acetate	ND		10	ug/L			10/01/21 12:27	1
Methylcyclohexane	ND		1.0	ug/L			10/01/21 12:27	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/01/21 12:27	1
Methylene Chloride	ND		5.0	ug/L			10/01/21 12:27	1
Styrene	ND		1.0	ug/L			10/01/21 12:27	1
Tetrachloroethene	ND		1.0	ug/L			10/01/21 12:27	1
Toluene	ND		1.0	ug/L			10/01/21 12:27	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/01/21 12:27	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/01/21 12:27	1
Trichloroethene	ND		1.0	ug/L			10/01/21 12:27	1
Trichlorofluoromethane	ND		1.0	ug/L			10/01/21 12:27	1
Vinyl chloride	ND		1.0	ug/L			10/01/21 12:27	1
Xylenes, Total	ND		2.0	ug/L			10/01/21 12:27	1
Ethylene Dibromide	ND		1.0	ug/L			10/01/21 12:27	1

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-506309/7

Matrix: Water

Analysis Batch: 506309

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		78 - 122		10/01/21 12:27	1
Dibromofluoromethane (Surr)	90		73 - 120		10/01/21 12:27	1
4-Bromofluorobenzene (Surr)	69		56 - 136		10/01/21 12:27	1
1,2-Dichloroethane-d4 (Surr)	109		62 - 137		10/01/21 12:27	1

Lab Sample ID: LCS 240-506309/4

Matrix: Water

Analysis Batch: 506309

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	7.52		ug/L		75	64 - 131
1,1,1,2,2-Tetrachloroethane	10.0	12.1		ug/L		121	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	4.83	*-	ug/L		48	51 - 146
1,1,2-Trichloroethane	10.0	12.2		ug/L		122	70 - 138
1,1-Dichloroethane	10.0	9.42		ug/L		94	72 - 127
1,1-Dichloroethene	10.0	7.23		ug/L		72	63 - 134
1,2,4-Trichlorobenzene	10.0	6.31		ug/L		63	44 - 147
1,2-Dibromo-3-Chloropropane	10.0	6.50		ug/L		65	53 - 135
1,2-Dichlorobenzene	10.0	9.50		ug/L		95	78 - 120
1,2-Dichloroethane	10.0	10.6		ug/L		106	66 - 128
1,2-Dichloropropane	10.0	10.9		ug/L		109	75 - 133
1,3-Dichlorobenzene	10.0	9.83		ug/L		98	80 - 120
1,4-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120
2-Butanone (MEK)	20.0	23.4		ug/L		117	54 - 156
2-Hexanone	20.0	19.6		ug/L		98	43 - 167
4-Methyl-2-pentanone (MIBK)	20.0	19.6		ug/L		98	46 - 158
Acetone	20.0	20.7		ug/L		103	50 - 149
Benzene	10.0	10.1		ug/L		101	77 - 123
Bromoform	10.0	8.13		ug/L		81	57 - 129
Bromomethane	10.0	7.69		ug/L		77	36 - 142
Carbon disulfide	10.0	6.19		ug/L		62	43 - 140
Carbon tetrachloride	10.0	6.24		ug/L		62	55 - 137
Chlorobenzene	10.0	11.0		ug/L		110	80 - 121
Chlorodibromomethane	10.0	9.23		ug/L		92	70 - 124
Chloroethane	10.0	8.80		ug/L		88	38 - 152
Chloroform	10.0	9.70		ug/L		97	74 - 122
Chloromethane	10.0	8.12		ug/L		81	47 - 143
cis-1,2-Dichloroethene	10.0	9.56		ug/L		96	77 - 123
cis-1,3-Dichloropropene	10.0	9.47		ug/L		95	64 - 130
Cyclohexane	10.0	4.61	*-	ug/L		46	58 - 146
Dichlorodifluoromethane	10.0	6.81		ug/L		68	34 - 153
Dichlorobromomethane	10.0	9.13		ug/L		91	69 - 126
Ethylbenzene	10.0	9.69		ug/L		97	80 - 121
Isopropylbenzene	10.0	7.91		ug/L		79	74 - 128
Methyl acetate	20.0	22.7		ug/L		113	42 - 169
Methylcyclohexane	10.0	4.59	*-	ug/L		46	62 - 136
Methyl tert-butyl ether	10.0	8.22		ug/L		82	65 - 126
Methylene Chloride	10.0	10.4		ug/L		104	71 - 125

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-506309/4

Matrix: Water

Analysis Batch: 506309

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	80 - 120
o-Xylene	10.0	9.09		ug/L		91	80 - 123
Styrene	10.0	11.5		ug/L		115	80 - 135
Tetrachloroethene	10.0	8.08		ug/L		81	76 - 123
Toluene	10.0	10.5		ug/L		105	80 - 123
trans-1,2-Dichloroethene	10.0	9.09		ug/L		91	75 - 124
trans-1,3-Dichloropropene	10.0	9.47		ug/L		95	57 - 129
Trichloroethene	10.0	8.79		ug/L		88	70 - 122
Trichlorofluoromethane	10.0	6.96		ug/L		70	30 - 170
Vinyl chloride	10.0	8.99		ug/L		90	60 - 144
Xylenes, Total	20.0	19.1		ug/L		95	80 - 121
Ethylene Dibromide	10.0	11.6		ug/L		116	71 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120
4-Bromofluorobenzene (Surr)	90		56 - 136
1,2-Dichloroethane-d4 (Surr)	97		62 - 137

Lab Sample ID: MB 240-506518/6

Matrix: Water

Analysis Batch: 506518

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,1-Dichloroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,1-Dichloroethene	ND		1.0	ug/L			10/04/21 10:02	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/04/21 10:02	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/04/21 10:02	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/04/21 10:02	1
1,2-Dichloroethane	ND		1.0	ug/L			10/04/21 10:02	1
1,2-Dichloropropane	ND		1.0	ug/L			10/04/21 10:02	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/04/21 10:02	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/04/21 10:02	1
2-Butanone (MEK)	ND		10	ug/L			10/04/21 10:02	1
2-Hexanone	ND		10	ug/L			10/04/21 10:02	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/04/21 10:02	1
Acetone	ND		10	ug/L			10/04/21 10:02	1
Benzene	ND		1.0	ug/L			10/04/21 10:02	1
Bromoform	ND		1.0	ug/L			10/04/21 10:02	1
Bromomethane	ND		1.0	ug/L			10/04/21 10:02	1
Carbon disulfide	ND		1.0	ug/L			10/04/21 10:02	1
Carbon tetrachloride	ND		1.0	ug/L			10/04/21 10:02	1
Chlorobenzene	ND		1.0	ug/L			10/04/21 10:02	1
Chlorodibromomethane	ND		1.0	ug/L			10/04/21 10:02	1

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-506518/6

Matrix: Water

Analysis Batch: 506518

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		1.0	ug/L			10/04/21 10:02	1
Chloroform	ND		1.0	ug/L			10/04/21 10:02	1
Chloromethane	ND		1.0	ug/L			10/04/21 10:02	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 10:02	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 10:02	1
Cyclohexane	ND		1.0	ug/L			10/04/21 10:02	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/04/21 10:02	1
Dichlorobromomethane	ND		1.0	ug/L			10/04/21 10:02	1
Ethylbenzene	ND		1.0	ug/L			10/04/21 10:02	1
Isopropylbenzene	ND		1.0	ug/L			10/04/21 10:02	1
Methyl acetate	ND		10	ug/L			10/04/21 10:02	1
Methylcyclohexane	ND		1.0	ug/L			10/04/21 10:02	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/04/21 10:02	1
Methylene Chloride	ND		5.0	ug/L			10/04/21 10:02	1
Styrene	ND		1.0	ug/L			10/04/21 10:02	1
Tetrachloroethene	ND		1.0	ug/L			10/04/21 10:02	1
Toluene	ND		1.0	ug/L			10/04/21 10:02	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/04/21 10:02	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/04/21 10:02	1
Trichloroethene	ND		1.0	ug/L			10/04/21 10:02	1
Trichlorofluoromethane	ND		1.0	ug/L			10/04/21 10:02	1
Vinyl chloride	ND		1.0	ug/L			10/04/21 10:02	1
Xylenes, Total	ND		2.0	ug/L			10/04/21 10:02	1
Ethylene Dibromide	ND		1.0	ug/L			10/04/21 10:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		78 - 122		10/04/21 10:02	1
Dibromofluoromethane (Surr)	104		73 - 120		10/04/21 10:02	1
4-Bromofluorobenzene (Surr)	88		56 - 136		10/04/21 10:02	1
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		10/04/21 10:02	1

Lab Sample ID: LCS 240-506518/4

Matrix: Water

Analysis Batch: 506518

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	64 - 131
1,1,2,2-Tetrachloroethane	10.0	11.5		ug/L		115	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	13.2		ug/L		132	51 - 146
1,1,2-Trichloroethane	10.0	10.7		ug/L		107	70 - 138
1,1-Dichloroethane	10.0	11.2		ug/L		112	72 - 127
1,1-Dichloroethene	10.0	12.2		ug/L		122	63 - 134
1,2,4-Trichlorobenzene	10.0	6.16		ug/L		62	44 - 147
1,2-Dibromo-3-Chloropropane	10.0	8.37		ug/L		84	53 - 135
1,2-Dichlorobenzene	10.0	9.65		ug/L		97	78 - 120
1,2-Dichloroethane	10.0	9.83		ug/L		98	66 - 128
1,2-Dichloropropane	10.0	10.6		ug/L		106	75 - 133
1,3-Dichlorobenzene	10.0	9.71		ug/L		97	80 - 120

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-506518/4

Matrix: Water

Analysis Batch: 506518

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	10.0	9.84		ug/L		98	80 - 120
2-Butanone (MEK)	20.0	19.1		ug/L		95	54 - 156
2-Hexanone	20.0	21.2		ug/L		106	43 - 167
4-Methyl-2-pentanone (MIBK)	20.0	19.7		ug/L		99	46 - 158
Acetone	20.0	18.0		ug/L		90	50 - 149
Benzene	10.0	11.1		ug/L		111	77 - 123
Bromoform	10.0	10.8		ug/L		108	57 - 129
Bromomethane	10.0	11.8		ug/L		118	36 - 142
Carbon disulfide	10.0	11.0		ug/L		110	43 - 140
Carbon tetrachloride	10.0	10.2		ug/L		102	55 - 137
Chlorobenzene	10.0	10.5		ug/L		105	80 - 121
Chlorodibromomethane	10.0	10.2		ug/L		102	70 - 124
Chloroethane	10.0	12.1		ug/L		121	38 - 152
Chloroform	10.0	9.97		ug/L		100	74 - 122
Chloromethane	10.0	11.4		ug/L		114	47 - 143
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	77 - 123
cis-1,3-Dichloropropene	10.0	8.77		ug/L		88	64 - 130
Cyclohexane	10.0	12.0		ug/L		120	58 - 146
Dichlorodifluoromethane	10.0	8.59		ug/L		86	34 - 153
Dichlorobromomethane	10.0	9.16		ug/L		92	69 - 126
Ethylbenzene	10.0	10.1		ug/L		101	80 - 121
Isopropylbenzene	10.0	9.86		ug/L		99	74 - 128
Methyl acetate	20.0	23.9		ug/L		119	42 - 169
Methylcyclohexane	10.0	10.3		ug/L		103	62 - 136
Methyl tert-butyl ether	10.0	11.3		ug/L		113	65 - 126
Methylene Chloride	10.0	10.9		ug/L		109	71 - 125
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120
o-Xylene	10.0	10.6		ug/L		106	80 - 123
Styrene	10.0	12.1		ug/L		121	80 - 135
Tetrachloroethene	10.0	10.4		ug/L		104	76 - 123
Toluene	10.0	10.8		ug/L		108	80 - 123
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	75 - 124
trans-1,3-Dichloropropene	10.0	9.43		ug/L		94	57 - 129
Trichloroethene	10.0	9.56		ug/L		96	70 - 122
Trichlorofluoromethane	10.0	9.57		ug/L		96	30 - 170
Vinyl chloride	10.0	11.5		ug/L		115	60 - 144
Xylenes, Total	20.0	20.9		ug/L		105	80 - 121
Ethylene Dibromide	10.0	10.4		ug/L		104	71 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120
4-Bromofluorobenzene (Surr)	95		56 - 136
1,2-Dichloroethane-d4 (Surr)	89		62 - 137

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-156932-11 MS

Matrix: Water

Analysis Batch: 506518

Client Sample ID: OW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	8.63		ug/L		86	60 - 130
1,1,2,2-Tetrachloroethane	ND		10.0	10.2		ug/L		102	54 - 145
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F2	10.0	6.71		ug/L		67	41 - 147
1,1,2-Trichloroethane	ND		10.0	9.81		ug/L		98	69 - 131
1,1-Dichloroethane	ND	F2	10.0	10.2		ug/L		102	68 - 125
1,1-Dichloroethene	ND		10.0	9.76		ug/L		98	56 - 135
1,2,4-Trichlorobenzene	ND		10.0	5.22		ug/L		52	29 - 156
1,2-Dibromo-3-Chloropropane	ND		10.0	6.57		ug/L		66	41 - 129
1,2-Dichlorobenzene	ND		10.0	7.71		ug/L		77	73 - 120
1,2-Dichloroethane	ND		10.0	8.99		ug/L		90	63 - 126
1,2-Dichloropropane	ND		10.0	10.1		ug/L		101	69 - 130
1,3-Dichlorobenzene	ND		10.0	7.87		ug/L		79	73 - 120
1,4-Dichlorobenzene	ND		10.0	8.05		ug/L		81	74 - 120
2-Butanone (MEK)	ND		20.0	15.2		ug/L		76	40 - 151
2-Hexanone	ND		20.0	18.6		ug/L		93	35 - 156
4-Methyl-2-pentanone (MIBK)	ND		20.0	16.7		ug/L		84	31 - 153
Acetone	ND		20.0	12.4		ug/L		62	33 - 149
Benzene	ND		10.0	9.74		ug/L		97	64 - 128
Bromoform	ND		10.0	8.69		ug/L		87	47 - 125
Bromomethane	ND		10.0	10.5		ug/L		105	28 - 150
Carbon disulfide	ND		10.0	8.87		ug/L		89	38 - 140
Carbon tetrachloride	ND		10.0	7.59		ug/L		76	51 - 133
Chlorobenzene	ND		10.0	8.60		ug/L		86	74 - 121
Chlorodibromomethane	ND		10.0	8.47		ug/L		85	65 - 120
Chloroethane	ND		10.0	10.6		ug/L		106	10 - 199
Chloroform	ND		10.0	9.29		ug/L		93	70 - 122
Chloromethane	ND		10.0	8.60		ug/L		86	32 - 149
cis-1,2-Dichloroethene	19		10.0	26.9		ug/L		81	66 - 128
cis-1,3-Dichloropropene	ND		10.0	7.61		ug/L		76	47 - 125
Cyclohexane	ND		10.0	6.68		ug/L		67	42 - 147
Dichlorodifluoromethane	ND		10.0	5.59		ug/L		56	38 - 139
Dichlorobromomethane	ND		10.0	8.34		ug/L		83	62 - 125
Ethylbenzene	ND		10.0	8.13		ug/L		81	67 - 127
Isopropylbenzene	ND		10.0	7.37		ug/L		74	64 - 129
Methyl acetate	ND	F2	20.0	22.1		ug/L		110	37 - 155
Methylcyclohexane	ND		10.0	5.36		ug/L		54	39 - 144
Methyl tert-butyl ether	ND		10.0	9.63		ug/L		96	47 - 134
Methylene Chloride	ND		10.0	9.76		ug/L		98	62 - 129
m-Xylene & p-Xylene	ND		10.0	8.13		ug/L		81	71 - 123
o-Xylene	ND		10.0	8.27		ug/L		83	70 - 125
Styrene	ND		10.0	9.43		ug/L		94	70 - 139
Tetrachloroethene	42	E	10.0	47.7	E 4	ug/L		57	62 - 131
Toluene	ND		10.0	9.59		ug/L		96	58 - 135
trans-1,2-Dichloroethene	ND		10.0	9.43		ug/L		94	56 - 136
trans-1,3-Dichloropropene	ND		10.0	7.75		ug/L		78	47 - 120
Trichloroethene	6.9	F1	10.0	14.0		ug/L		71	61 - 124
Trichlorofluoromethane	ND		10.0	7.55		ug/L		75	24 - 177
Vinyl chloride	ND		10.0	10.0		ug/L		100	43 - 157

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-156932-11 MS

Matrix: Water

Analysis Batch: 506518

Client Sample ID: OW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	ND		20.0	16.4		ug/L		82	71 - 123
Ethylene Dibromide	ND		10.0	8.91		ug/L		89	69 - 125
Surrogate	MS %Recovery	MS Qualifier	Limits						
Toluene-d8 (Surr)	99		78 - 122						
Dibromofluoromethane (Surr)	90		73 - 120						
4-Bromofluorobenzene (Surr)	83		56 - 136						
1,2-Dichloroethane-d4 (Surr)	95		62 - 137						

Lab Sample ID: 240-156932-11 MSD

Matrix: Water

Analysis Batch: 506518

Client Sample ID: OW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		10.0	7.90		ug/L		79	60 - 130	9	17
1,1,2,2-Tetrachloroethane	ND		10.0	9.86		ug/L		99	54 - 145	4	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F2	10.0	10.0	F2	ug/L		100	41 - 147	39	35
1,1,2-Trichloroethane	ND		10.0	9.42		ug/L		94	69 - 131	4	14
1,1-Dichloroethane	ND	F2	10.0	8.82	F2	ug/L		88	68 - 125	15	13
1,1-Dichloroethene	ND		10.0	9.22		ug/L		92	56 - 135	6	26
1,2,4-Trichlorobenzene	ND		10.0	5.57		ug/L		56	29 - 156	7	19
1,2-Dibromo-3-Chloropropane	ND		10.0	6.61		ug/L		66	41 - 129	1	22
1,2-Dichlorobenzene	ND		10.0	7.69		ug/L		77	73 - 120	0	14
1,2-Dichloroethane	ND		10.0	8.73		ug/L		87	63 - 126	3	12
1,2-Dichloropropane	ND		10.0	9.45		ug/L		94	69 - 130	6	13
1,3-Dichlorobenzene	ND		10.0	7.60		ug/L		76	73 - 120	3	14
1,4-Dichlorobenzene	ND		10.0	7.76		ug/L		78	74 - 120	4	15
2-Butanone (MEK)	ND		20.0	13.7		ug/L		69	40 - 151	11	20
2-Hexanone	ND		20.0	17.3		ug/L		87	35 - 156	7	17
4-Methyl-2-pentanone (MIBK)	ND		20.0	17.5		ug/L		88	31 - 153	5	15
Acetone	ND		20.0	10.7		ug/L		54	33 - 149	15	34
Benzene	ND		10.0	9.70		ug/L		97	64 - 128	0	14
Bromoform	ND		10.0	8.44		ug/L		84	47 - 125	3	15
Bromomethane	ND		10.0	11.1		ug/L		111	28 - 150	6	26
Carbon disulfide	ND		10.0	8.50		ug/L		85	38 - 140	4	23
Carbon tetrachloride	ND		10.0	7.44		ug/L		74	51 - 133	2	24
Chlorobenzene	ND		10.0	8.35		ug/L		83	74 - 121	3	14
Chlorodibromomethane	ND		10.0	8.68		ug/L		87	65 - 120	2	13
Chloroethane	ND		10.0	11.4		ug/L		114	10 - 199	7	30
Chloroform	ND		10.0	8.58		ug/L		86	70 - 122	8	14
Chloromethane	ND		10.0	9.28		ug/L		93	32 - 149	8	27
cis-1,2-Dichloroethene	19		10.0	25.9		ug/L		71	66 - 128	4	14
cis-1,3-Dichloropropene	ND		10.0	7.46		ug/L		75	47 - 125	2	13
Cyclohexane	ND		10.0	8.73		ug/L		87	42 - 147	27	35
Dichlorodifluoromethane	ND		10.0	6.90		ug/L		69	38 - 139	21	35
Dichlorobromomethane	ND		10.0	8.10		ug/L		81	62 - 125	3	13
Ethylbenzene	ND		10.0	7.97		ug/L		80	67 - 127	2	15
Isopropylbenzene	ND		10.0	7.32		ug/L		73	64 - 129	1	18

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-156932-11 MSD

Matrix: Water

Analysis Batch: 506518

Client Sample ID: OW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl acetate	ND	F2	20.0	16.1	F2	ug/L		81	37 - 155	31	18
Methylcyclohexane	ND		10.0	7.07		ug/L		71	39 - 144	28	35
Methyl tert-butyl ether	ND		10.0	9.70		ug/L		97	47 - 134	1	16
Methylene Chloride	ND		10.0	8.92		ug/L		89	62 - 129	9	17
m-Xylene & p-Xylene	ND		10.0	8.11		ug/L		81	71 - 123	0	16
o-Xylene	ND		10.0	8.39		ug/L		84	70 - 125	1	15
Styrene	ND		10.0	9.22		ug/L		92	70 - 139	2	18
Tetrachloroethene	42	E	10.0	40.5	E 4	ug/L		-14	62 - 131	16	20
Toluene	ND		10.0	8.77		ug/L		88	58 - 135	9	14
trans-1,2-Dichloroethene	ND		10.0	8.27		ug/L		83	56 - 136	13	15
trans-1,3-Dichloropropene	ND		10.0	7.90		ug/L		79	47 - 120	2	14
Trichloroethene	6.9	F1	10.0	12.4	F1	ug/L		56	61 - 124	12	15
Trichlorofluoromethane	ND		10.0	8.20		ug/L		82	24 - 177	8	34
Vinyl chloride	ND		10.0	10.6		ug/L		106	43 - 157	6	24
Xylenes, Total	ND		20.0	16.5		ug/L		83	71 - 123	1	15
Ethylene Dibromide	ND		10.0	8.70		ug/L		87	69 - 125	2	14

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	89		78 - 122
Dibromofluoromethane (Surr)	88		73 - 120
4-Bromofluorobenzene (Surr)	79		56 - 136
1,2-Dichloroethane-d4 (Surr)	73		62 - 137

Lab Sample ID: MB 240-506725/6

Matrix: Water

Analysis Batch: 506725

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,1-Dichloroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,1-Dichloroethene	ND		1.0	ug/L			10/05/21 10:53	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/05/21 10:53	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/05/21 10:53	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/05/21 10:53	1
1,2-Dichloroethane	ND		1.0	ug/L			10/05/21 10:53	1
1,2-Dichloropropane	ND		1.0	ug/L			10/05/21 10:53	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/05/21 10:53	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/05/21 10:53	1
2-Butanone (MEK)	ND		10	ug/L			10/05/21 10:53	1
2-Hexanone	ND		10	ug/L			10/05/21 10:53	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/05/21 10:53	1
Acetone	ND		10	ug/L			10/05/21 10:53	1
Benzene	ND		1.0	ug/L			10/05/21 10:53	1
Bromoform	ND		1.0	ug/L			10/05/21 10:53	1
Bromomethane	ND		1.0	ug/L			10/05/21 10:53	1

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-506725/6

Matrix: Water

Analysis Batch: 506725

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	ND		1.0	ug/L			10/05/21 10:53	1
Carbon tetrachloride	ND		1.0	ug/L			10/05/21 10:53	1
Chlorobenzene	ND		1.0	ug/L			10/05/21 10:53	1
Chlorodibromomethane	ND		1.0	ug/L			10/05/21 10:53	1
Chloroethane	ND		1.0	ug/L			10/05/21 10:53	1
Chloroform	ND		1.0	ug/L			10/05/21 10:53	1
Chloromethane	ND		1.0	ug/L			10/05/21 10:53	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/05/21 10:53	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/05/21 10:53	1
Cyclohexane	ND		1.0	ug/L			10/05/21 10:53	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/05/21 10:53	1
Dichlorobromomethane	ND		1.0	ug/L			10/05/21 10:53	1
Ethylbenzene	ND		1.0	ug/L			10/05/21 10:53	1
Isopropylbenzene	ND		1.0	ug/L			10/05/21 10:53	1
Methyl acetate	ND		10	ug/L			10/05/21 10:53	1
Methylcyclohexane	ND		1.0	ug/L			10/05/21 10:53	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/05/21 10:53	1
Methylene Chloride	ND		5.0	ug/L			10/05/21 10:53	1
Styrene	ND		1.0	ug/L			10/05/21 10:53	1
Tetrachloroethene	ND		1.0	ug/L			10/05/21 10:53	1
Toluene	ND		1.0	ug/L			10/05/21 10:53	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/05/21 10:53	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/05/21 10:53	1
Trichloroethene	ND		1.0	ug/L			10/05/21 10:53	1
Trichlorofluoromethane	ND		1.0	ug/L			10/05/21 10:53	1
Vinyl chloride	ND		1.0	ug/L			10/05/21 10:53	1
Xylenes, Total	ND		2.0	ug/L			10/05/21 10:53	1
Ethylene Dibromide	ND		1.0	ug/L			10/05/21 10:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	92		78 - 122		10/05/21 10:53	1
Dibromofluoromethane (Surr)	89		73 - 120		10/05/21 10:53	1
4-Bromofluorobenzene (Surr)	77		56 - 136		10/05/21 10:53	1
1,2-Dichloroethane-d4 (Surr)	84		62 - 137		10/05/21 10:53	1

Lab Sample ID: LCS 240-506725/4

Matrix: Water

Analysis Batch: 506725

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	8.88		ug/L		89	64 - 131
1,1,2,2-Tetrachloroethane	10.0	11.9		ug/L		119	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	6.75		ug/L		67	51 - 146
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	70 - 138
1,1-Dichloroethane	10.0	11.0		ug/L		110	72 - 127
1,1-Dichloroethene	10.0	9.13		ug/L		91	63 - 134
1,2,4-Trichlorobenzene	10.0	8.19		ug/L		82	44 - 147
1,2-Dibromo-3-Chloropropane	10.0	8.99		ug/L		90	53 - 135

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-506725/4

Matrix: Water

Analysis Batch: 506725

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	78 - 120
1,2-Dichloroethane	10.0	10.1		ug/L		101	66 - 128
1,2-Dichloropropane	10.0	11.1		ug/L		111	75 - 133
1,3-Dichlorobenzene	10.0	9.97		ug/L		100	80 - 120
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	80 - 120
2-Butanone (MEK)	20.0	21.4		ug/L		107	54 - 156
2-Hexanone	20.0	21.4		ug/L		107	43 - 167
4-Methyl-2-pentanone (MIBK)	20.0	21.5		ug/L		108	46 - 158
Acetone	20.0	19.5		ug/L		97	50 - 149
Benzene	10.0	11.2		ug/L		112	77 - 123
Bromoform	10.0	10.9		ug/L		109	57 - 129
Bromomethane	10.0	12.3		ug/L		123	36 - 142
Carbon disulfide	10.0	9.31		ug/L		93	43 - 140
Carbon tetrachloride	10.0	7.58		ug/L		76	55 - 137
Chlorobenzene	10.0	10.4		ug/L		104	80 - 121
Chlorodibromomethane	10.0	10.5		ug/L		105	70 - 124
Chloroethane	10.0	13.0		ug/L		130	38 - 152
Chloroform	10.0	10.3		ug/L		103	74 - 122
Chloromethane	10.0	11.3		ug/L		113	47 - 143
cis-1,2-Dichloroethene	10.0	11.1		ug/L		111	77 - 123
cis-1,3-Dichloropropene	10.0	9.42		ug/L		94	64 - 130
Cyclohexane	10.0	6.96		ug/L		70	58 - 146
Dichlorodifluoromethane	10.0	8.89		ug/L		89	34 - 153
Dichlorobromomethane	10.0	9.70		ug/L		97	69 - 126
Ethylbenzene	10.0	10.2		ug/L		102	80 - 121
Isopropylbenzene	10.0	9.36		ug/L		94	74 - 128
Methyl acetate	20.0	23.6		ug/L		118	42 - 169
Methylcyclohexane	10.0	6.78		ug/L		68	62 - 136
Methyl tert-butyl ether	10.0	11.4		ug/L		114	65 - 126
Methylene Chloride	10.0	11.0		ug/L		110	71 - 125
m-Xylene & p-Xylene	10.0	10.0		ug/L		100	80 - 120
o-Xylene	10.0	10.7		ug/L		107	80 - 123
Styrene	10.0	12.7		ug/L		127	80 - 135
Tetrachloroethene	10.0	8.67		ug/L		87	76 - 123
Toluene	10.0	10.6		ug/L		106	80 - 123
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	75 - 124
trans-1,3-Dichloropropene	10.0	9.75		ug/L		98	57 - 129
Trichloroethene	10.0	9.66		ug/L		97	70 - 122
Trichlorofluoromethane	10.0	10.1		ug/L		101	30 - 170
Vinyl chloride	10.0	11.7		ug/L		117	60 - 144
Xylenes, Total	20.0	20.7		ug/L		104	80 - 121
Ethylene Dibromide	10.0	10.9		ug/L		109	71 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120
4-Bromofluorobenzene (Surr)	100		56 - 136
1,2-Dichloroethane-d4 (Surr)	96		62 - 137

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-506962/7

Matrix: Water

Analysis Batch: 506962

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,1,2,2-Tetrachloroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,1,2-Trichloroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,1-Dichloroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,1-Dichloroethene	ND		1.0	ug/L			10/06/21 11:39	1
1,2,4-Trichlorobenzene	ND		1.0	ug/L			10/06/21 11:39	1
1,2-Dibromo-3-Chloropropane	ND		2.0	ug/L			10/06/21 11:39	1
1,2-Dichlorobenzene	ND		1.0	ug/L			10/06/21 11:39	1
1,2-Dichloroethane	ND		1.0	ug/L			10/06/21 11:39	1
1,2-Dichloropropane	ND		1.0	ug/L			10/06/21 11:39	1
1,3-Dichlorobenzene	ND		1.0	ug/L			10/06/21 11:39	1
1,4-Dichlorobenzene	ND		1.0	ug/L			10/06/21 11:39	1
2-Butanone (MEK)	ND		10	ug/L			10/06/21 11:39	1
2-Hexanone	ND		10	ug/L			10/06/21 11:39	1
4-Methyl-2-pentanone (MIBK)	ND		10	ug/L			10/06/21 11:39	1
Acetone	ND		10	ug/L			10/06/21 11:39	1
Benzene	ND		1.0	ug/L			10/06/21 11:39	1
Bromoform	ND		1.0	ug/L			10/06/21 11:39	1
Bromomethane	ND		1.0	ug/L			10/06/21 11:39	1
Carbon disulfide	ND		1.0	ug/L			10/06/21 11:39	1
Carbon tetrachloride	ND		1.0	ug/L			10/06/21 11:39	1
Chlorobenzene	ND		1.0	ug/L			10/06/21 11:39	1
Chlorodibromomethane	ND		1.0	ug/L			10/06/21 11:39	1
Chloroethane	ND		1.0	ug/L			10/06/21 11:39	1
Chloroform	ND		1.0	ug/L			10/06/21 11:39	1
Chloromethane	ND		1.0	ug/L			10/06/21 11:39	1
cis-1,2-Dichloroethene	ND		1.0	ug/L			10/06/21 11:39	1
cis-1,3-Dichloropropene	ND		1.0	ug/L			10/06/21 11:39	1
Cyclohexane	ND		1.0	ug/L			10/06/21 11:39	1
Dichlorodifluoromethane	ND		1.0	ug/L			10/06/21 11:39	1
Dichlorobromomethane	ND		1.0	ug/L			10/06/21 11:39	1
Ethylbenzene	ND		1.0	ug/L			10/06/21 11:39	1
Isopropylbenzene	ND		1.0	ug/L			10/06/21 11:39	1
Methyl acetate	ND		10	ug/L			10/06/21 11:39	1
Methylcyclohexane	ND		1.0	ug/L			10/06/21 11:39	1
Methyl tert-butyl ether	ND		1.0	ug/L			10/06/21 11:39	1
Methylene Chloride	ND		5.0	ug/L			10/06/21 11:39	1
Styrene	ND		1.0	ug/L			10/06/21 11:39	1
Tetrachloroethene	ND		1.0	ug/L			10/06/21 11:39	1
Toluene	ND		1.0	ug/L			10/06/21 11:39	1
trans-1,2-Dichloroethene	ND		1.0	ug/L			10/06/21 11:39	1
trans-1,3-Dichloropropene	ND		1.0	ug/L			10/06/21 11:39	1
Trichloroethene	ND		1.0	ug/L			10/06/21 11:39	1
Trichlorofluoromethane	ND		1.0	ug/L			10/06/21 11:39	1
Vinyl chloride	ND		1.0	ug/L			10/06/21 11:39	1
Xylenes, Total	ND		2.0	ug/L			10/06/21 11:39	1
Ethylene Dibromide	ND		1.0	ug/L			10/06/21 11:39	1

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-506962/7

Matrix: Water

Analysis Batch: 506962

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		78 - 122		10/06/21 11:39	1
Dibromofluoromethane (Surr)	85		73 - 120		10/06/21 11:39	1
4-Bromofluorobenzene (Surr)	91		56 - 136		10/06/21 11:39	1
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		10/06/21 11:39	1

Lab Sample ID: LCS 240-506962/4

Matrix: Water

Analysis Batch: 506962

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.44		ug/L		94	64 - 131
1,1,2,2-Tetrachloroethane	10.0	12.8		ug/L		128	58 - 157
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.91		ug/L		89	51 - 146
1,1,2-Trichloroethane	10.0	12.2		ug/L		122	70 - 138
1,1-Dichloroethane	10.0	10.8		ug/L		108	72 - 127
1,1-Dichloroethene	10.0	9.07		ug/L		91	63 - 134
1,2,4-Trichlorobenzene	10.0	6.82		ug/L		68	44 - 147
1,2-Dibromo-3-Chloropropane	10.0	7.94		ug/L		79	53 - 135
1,2-Dichlorobenzene	10.0	9.60		ug/L		96	78 - 120
1,2-Dichloroethane	10.0	12.2		ug/L		122	66 - 128
1,2-Dichloropropane	10.0	12.2		ug/L		122	75 - 133
1,3-Dichlorobenzene	10.0	9.86		ug/L		99	80 - 120
1,4-Dichlorobenzene	10.0	9.84		ug/L		98	80 - 120
2-Butanone (MEK)	20.0	26.8		ug/L		134	54 - 156
2-Hexanone	20.0	30.6		ug/L		153	43 - 167
4-Methyl-2-pentanone (MIBK)	20.0	29.3		ug/L		146	46 - 158
Acetone	20.0	23.7		ug/L		119	50 - 149
Benzene	10.0	10.4		ug/L		104	77 - 123
Bromoform	10.0	8.70		ug/L		87	57 - 129
Bromomethane	10.0	6.58		ug/L		66	36 - 142
Carbon disulfide	10.0	8.13		ug/L		81	43 - 140
Carbon tetrachloride	10.0	8.74		ug/L		87	55 - 137
Chlorobenzene	10.0	10.9		ug/L		109	80 - 121
Chlorodibromomethane	10.0	10.0		ug/L		100	70 - 124
Chloroethane	10.0	8.95		ug/L		89	38 - 152
Chloroform	10.0	10.3		ug/L		103	74 - 122
Chloromethane	10.0	9.76		ug/L		98	47 - 143
cis-1,2-Dichloroethene	10.0	9.91		ug/L		99	77 - 123
cis-1,3-Dichloropropene	10.0	11.6		ug/L		116	64 - 130
Cyclohexane	10.0	10.5		ug/L		105	58 - 146
Dichlorodifluoromethane	10.0	7.42		ug/L		74	34 - 153
Dichlorobromomethane	10.0	10.4		ug/L		104	69 - 126
Ethylbenzene	10.0	10.5		ug/L		105	80 - 121
Isopropylbenzene	10.0	9.32		ug/L		93	74 - 128
Methyl acetate	20.0	28.3		ug/L		142	42 - 169
Methylcyclohexane	10.0	9.13		ug/L		91	62 - 136
Methyl tert-butyl ether	10.0	10.4		ug/L		104	65 - 126
Methylene Chloride	10.0	10.5		ug/L		105	71 - 125

Eurofins TestAmerica, Canton

QC Sample Results

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-506962/4

Matrix: Water

Analysis Batch: 506962

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	10.0	10.8		ug/L		108	80 - 120
o-Xylene	10.0	9.82		ug/L		98	80 - 123
Styrene	10.0	12.2		ug/L		122	80 - 135
Tetrachloroethene	10.0	9.14		ug/L		91	76 - 123
Toluene	10.0	10.6		ug/L		106	80 - 123
trans-1,2-Dichloroethene	10.0	9.82		ug/L		98	75 - 124
trans-1,3-Dichloropropene	10.0	11.6		ug/L		116	57 - 129
Trichloroethene	10.0	9.30		ug/L		93	70 - 122
Trichlorofluoromethane	10.0	6.84		ug/L		68	30 - 170
Vinyl chloride	10.0	9.99		ug/L		100	60 - 144
Xylenes, Total	20.0	20.6		ug/L		103	80 - 121
Ethylene Dibromide	10.0	12.1		ug/L		121	71 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120
4-Bromofluorobenzene (Surr)	100		56 - 136
1,2-Dichloroethane-d4 (Surr)	107		62 - 137

QC Association Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

GC/MS VOA

Analysis Batch: 506309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-156932-1	OW-24	Total/NA	Water	8260B	
240-156932-2	OW-18	Total/NA	Water	8260B	
240-156932-3	OW-19	Total/NA	Water	8260B	
240-156932-4	OW-10R	Total/NA	Water	8260B	
240-156932-5	TRIP BLANK	Total/NA	Water	8260B	
240-156932-6	OW-13R	Total/NA	Water	8260B	
240-156932-7	PUMP RINSATE BLANK	Total/NA	Water	8260B	
240-156932-8	OW-5	Total/NA	Water	8260B	
MB 240-506309/7	Method Blank	Total/NA	Water	8260B	
LCS 240-506309/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 506518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-156932-9	OW-5 DUP	Total/NA	Water	8260B	
240-156932-10	FIELD BLANK	Total/NA	Water	8260B	
240-156932-11	OW-6	Total/NA	Water	8260B	
MB 240-506518/6	Method Blank	Total/NA	Water	8260B	
LCS 240-506518/4	Lab Control Sample	Total/NA	Water	8260B	
240-156932-11 MS	OW-6	Total/NA	Water	8260B	
240-156932-11 MSD	OW-6	Total/NA	Water	8260B	

Analysis Batch: 506725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-156932-12	OW-2	Total/NA	Water	8260B	
MB 240-506725/6	Method Blank	Total/NA	Water	8260B	
LCS 240-506725/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 506962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-156932-12	OW-2	Total/NA	Water	8260B	
MB 240-506962/7	Method Blank	Total/NA	Water	8260B	
LCS 240-506962/4	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-24

Date Collected: 09/21/21 08:35

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 14:10	LEE	TAL CAN

Client Sample ID: OW-18

Date Collected: 09/21/21 09:55

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 14:32	LEE	TAL CAN

Client Sample ID: OW-19

Date Collected: 09/21/21 11:15

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 14:54	LEE	TAL CAN

Client Sample ID: OW-10R

Date Collected: 09/21/21 13:35

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 15:16	LEE	TAL CAN

Client Sample ID: TRIP BLANK

Date Collected: 09/21/21 14:05

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 15:38	LEE	TAL CAN

Client Sample ID: OW-13R

Date Collected: 09/21/21 14:25

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 16:00	LEE	TAL CAN

Client Sample ID: PUMP RINSATE BLANK

Date Collected: 09/21/21 14:45

Date Received: 09/27/21 09:00

Lab Sample ID: 240-156932-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 16:22	LEE	TAL CAN

Eurofins TestAmerica, Canton

Lab Chronicle

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Client Sample ID: OW-5

Lab Sample ID: 240-156932-8

Date Collected: 09/21/21 16:05

Matrix: Water

Date Received: 09/27/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506309	10/01/21 16:44	LEE	TAL CAN

Client Sample ID: OW-5 DUP

Lab Sample ID: 240-156932-9

Date Collected: 09/21/21 16:06

Matrix: Water

Date Received: 09/27/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506518	10/04/21 16:23	LEE	TAL CAN

Client Sample ID: FIELD BLANK

Lab Sample ID: 240-156932-10

Date Collected: 09/21/21 16:20

Matrix: Water

Date Received: 09/27/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506518	10/04/21 16:46	LEE	TAL CAN

Client Sample ID: OW-6

Lab Sample ID: 240-156932-11

Date Collected: 09/22/21 10:35

Matrix: Water

Date Received: 09/27/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506518	10/04/21 17:08	LEE	TAL CAN

Client Sample ID: OW-2

Lab Sample ID: 240-156932-12

Date Collected: 09/22/21 11:20

Matrix: Water

Date Received: 09/27/21 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	506725	10/05/21 18:19	LEE	TAL CAN
Total/NA	Analysis	8260B		3.33	506962	10/06/21 12:06	LEE	TAL CAN

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: Cardinal Resources
Project/Site: Carroll & Dubies

Job ID: 240-156932-1

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-22
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-22
Georgia	State	4062	02-23-22
Illinois	NELAP	200004	07-31-22
Iowa	State	421	06-01-23
Kansas	NELAP	E-10336	04-30-22
Kentucky (UST)	State	112225	02-23-22
Kentucky (WW)	State	KY98016	12-31-21
Minnesota	NELAP	OH00048	12-31-21
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-22
New York	NELAP	10975	03-31-22
Ohio VAP	State	CL0024	12-21-23
Oregon	NELAP	4062	02-23-22
Pennsylvania	NELAP	68-00340	08-31-22
Texas	NELAP	T104704517-18-10	08-31-22
Virginia	NELAP	11570	09-14-22
Washington	State	C971	01-12-22
West Virginia DEP	State	210	12-31-21

10/8/2021

10/8/2021

Eurofins TestAmerica Canton Sample Receipt Form/Narrative				Login # : <u>156932</u>	
Canton Facility					
Client <u>Cardinal Resources</u>		Site Name _____		Cooler unpacked by: <u>Ryan C</u>	
Cooler Received on <u>9-27-21</u>		Opened on <u>9-27-21 900</u>			
FedEx: 1 st Grd <u>Exp</u>		UPS FAS Clipper		Client Drop Off TestAmerica Courier Other _____	
Receipt After-hours: Drop-off Date/Time			Storage Location		
TestAmerica Cooler # <u>TA</u>		Foam Box _____		Client Cooler Box Other _____	
Packing material used: <u>Bubble Wrap</u>		Foam Plastic Bag _____		None Other _____	
COOLANT: Wet Ice _____		Blue Ice _____		Dry Ice <u>Water</u> None _____	
1. Cooler temperature upon receipt				☐ See Multiple Cooler Form	
IR GUN# IR-14 (CF +0.1 °C)		Observed Cooler Temp. <u>17.4</u> °C		Corrected Cooler Temp. <u>17.5</u> °C	
IR GUN #IR-15 (CF +0.2 °C)		Observed Cooler Temp. _____ °C		Corrected Cooler Temp. _____ °C	
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>2</u>				Yes No	
-Were the seals on the outside of the cooler(s) signed & dated?				Yes No NA	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?				Yes No NA	
-Were tamper/custody seals intact and uncompromised?				Yes No NA	
3. Shippers' packing slip attached to the cooler(s)?				Yes No	
4. Did custody papers accompany the sample(s)?				Yes No	
5. Were the custody papers relinquished & signed in the appropriate place?				Yes No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?				Yes No	
7. Did all bottles arrive in good condition (Unbroken)?				Yes No	
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?				Yes No	
9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?				Yes No	
10. Were correct bottle(s) used for the test(s) indicated?				Yes No	
11. Sufficient quantity received to perform indicated analyses?				Yes No	
12. Are these work share samples and all listed on the COC?				Yes No	
If yes, Questions 13-17 have been checked at the originating laboratory.					
13. Were all preserved sample(s) at the correct pH upon receipt?				Yes No <u>NA</u> pH Strip Lot# <u>HC157842</u>	
14. Were VOAs on the COC?				Yes No <u>NA</u>	
15. Were air bubbles >6 mm in any VOA vials? Larger than this.				Yes No <u>NA</u>	
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u>60282</u>				Yes No <u>NA</u>	
17. Was a LL Hg or Me Hg trip blank present?				Yes No <u>NA</u>	
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____					
Concerning _____					

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES		☐ additional next page	Samples processed by: _____
19. SAMPLE CONDITION			
Sample(s) _____		were received after the recommended holding time had expired.	
Sample(s) _____		were received in a broken container.	
Sample(s) _____		were received with bubble >6 mm in diameter. (Notify PM)	
20. SAMPLE PRESERVATION			
Sample(s) _____		were further preserved in the laboratory.	
Time preserved: _____		Preservative(s) added/Lot number(s): _____	
VOA Sample Preservation - Date/Time VOAs Frozen: _____			

Appendix B
Historical Summary of Detected TCL Volatile Organic Compounds in
Groundwater – Table B-1

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
MW-1	03/22/93	NR	0.9 J	NR	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.1 B	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	09/26/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	04/20/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<10	0.66 J	<1.0	<1.0	0.40 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	01/05/00	<10	0.65 J,B	<1.0	<1.0	0.37 J	<2.0	0.083 J	<2.0	<1.0	<1.0	0.22 J	<1.0	0.14 J	<1.0	0.35 J,B	<1.0	<1.0	-	0.097 J	<1.0	<2.0	<1.0
	06/06/00	<10	0.57 J	<1.0	<1.0	0.30 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/15/01	10 UJ	0.40 J	<1.0	<1.0	0.38 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	08/29/01	<10	<1.0	<1.0	<1.0	0.32 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/02	10 U	<1.0	<1.0	<1.0	0.17 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/18/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	0.24 J	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.0
	02/15/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/13/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/24/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 UJ	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
MW-4	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/24/93	NR	18 J	NR	<0.5	0.4 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	NR	<4.1 B,J	<0.5	<0.5	-	0.1 J	<0.5	<0.5	<0.5
	09/26/94	<10	11	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
	04/24/95	<10	15	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
	02/18/99	<10	5.7	<1.0	<1.0	0.20 J	<2.0	<1.0	<2.0	<1.0	<0.1	<1.0	9.8	<1.0	<1.0	<1.0	<1.0	0.16 J	-	0.16 J	0.20 J	<2.0	<1.0
	01/05/00	<10	6.9 B	<1.0	<1.0	0.26 J	<2.0	<1.0	<2.0	0.13 J	<1.0	0.45 J	3.3	<1.0	<1.0	0.11 J,B	<1.0	<1.0	-	0.090 J	0.15 J	0.30 J	<1.0
	06/06/00	<10	4.8	<1.0	<1.0	0.20 J	<2.0	<1.0	<2.0	0.11 J	<1.0	<1.0	3.8	<1.0	<1.0	<1.0	<1.0	0.30 J	-	<1.0	<1.0	0.18 J	<1.0
	03/14/01	<10	3.6	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.2	<1.0	<1.0	<1.0	<1.0	0.66 J	-	<1.0	0.42 J	<2.0	<1.0
	08/29/01	<10	12	<1.0	<1.0	0.21 J	<2.0	<1.0	0.26 J	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/02	<10	10	<1.0	<1.0	0.21 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/18/02	<10	7.8	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	2.2	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.84 J	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/26/04	10 U	2.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.50 J	<1.0	<1.0	<1.0	<1.0	0.72 J	-	<1.0	<1.0	<2.0	<1.0
	02/15/06	10 U	3.8	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/29/06	10 U	9.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/13/07	10 U	7.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	0.26 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/24/08	10 U	4.4	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.48 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	2.0 U	1.0 U
	07/16/09	10 U	1.2	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/20/10	10 U	2.0	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/11/14	25 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-2	03/23/93	NR	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	55	<0.5	NR	<1.3 B	<0.5	50	-	<0.5	22	<0.5	<0.5
	09/23/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	130	<10	NR	<10	<10	100	-	<10	24	<10	<10
	04/23/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	85	<10	<10	<10	<10	76	-	<10	22	<10	<10
	02/17/99	<50	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	130	<5.0	<50	3.6 J,B	<5.0	86	-	<5.0	22	<10	<5.0
	01/05/00	<10	0.46 J	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	150	<5.0	<50	<5.0	<5.0	80	-	<5.0	21	0.72 J	<5.0
	06/06/00	<33	<3.3	<3.3	<3.3	<3.3	<6.7	<3.3	<6.7	<3.3	<3.3	<3.3	99	<3.3	<33	<3.3	<3.3	80	-	<3.3	19	<6.7	<3.3
	03/15/01	<100	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	310	<10	<100	4.6 J	<10	160	-	<10	32	<20	<10
	08/29/01	<25	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	69	<2.5	<25	<2.5	<2.5	61	-	<2.5	15	<5.0	<2.5
	04/25/02	<25	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	81	<2.5	<25	1.2 U	<2.5	60	-	<2.5	18	0.95 J	<2.5
	09/18/02	<29	<2.9	<2.9	<2.9	<2.9	<5.7	<2.9	<5.7	<2.9	<2.9	<2.9	85	<2.9	<29	<2.9	<2.9	68	-	<2.9	18	<5.7	<2.9
	04/09/03	<120	<12	<12	<12	<12	<25	<12	<25	<12	<12	<12	290	<12	<120	<12	<12	160	-	<12	29	<25	<12
	04/26/04	10 U	1.5 J	<6.7	<6.7	<6.7	<13	<6.7	<13	<6.7	<6.7	<6.7	170	<6.7	<67	<6.7	<6.7	110	-	1.3 J	22	<13	<6.7
	02/15/06	40 U	4.0 U	4.0 U	4.0 U	4.0 U	8.0 U	4.0 U	8.0 U	4.0 U	4.0 U	4.0 U	150	4.0 U	40 U	4.0 U	4.0 U	120	-	4.0 U	20	8.0 U	4.0 U
	05/23/06	80 U	8.0 U	8.0 U	8.0 U	8.0 U	16 U	8.0 U	16 U	8.0 U	8.0 U	8.0 U	250	8.0 U	80 U	8.0 U	8.0 U	130	8.0 U	8.0 U	22	16 U	8.0 U
	08/30/06	25 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U	74	2.5 U	25 U	2.5 U	2.5 U	90	2.5 U	2.5 U	16	5.0 U	2.5 U
	11/29/06	120 U	12 U	12 U	12 U	12 U	25 U	12 U	25 U	12 U	12 U	12 U	280	12 U	120 U	12 U	12 U	140	12 U	12 U	24	25 U	12 U
	06/13/07	20 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	36	2.0 U	20 U	2.0 U	2.0 U	52	2.0 U	2.0 U	12	4.0 U	2.0 U
	07/24/08	20 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U	30	0.96 J	20 U	2.0 U	2.0 U	59	2.0 U	2.0 U	11	4.0 U	1.1 J
	07/16/09	25 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U	53	2.5 U	25 U	2.5 U	2.5 U	62	2.5 U	2.5 U	9.7	5.0 U	2.5 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	39	1.0 U	10 U	1.0 U	1.0 U	77	1.0 U	1.0 U	12	2.0 U	1.0 U
	10/13/11	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	98	2.5 U	2.5 U	2.5 U	2.5 U	110	2.5 U	2.5 U	15	2.5 U	5.0 U
	02/06/13	100 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	330	10 U	10 U	10 U	10 U	180	10 U	10 U	26	10 U	20 U
	06/11/14	25 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	54	1.0 U	10 U	5.0 U	1.0 U	94	1.0 U	1.0 U	11	1.0 U	2.0 U
	09/24/15	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	54	2.5 U	25 U	2.5 U	2.5 U	74	2.5 U	2.5 U	10	2.5 U	5.0 U
	11/01/16	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	63	2.5 U	25 U	2.5 U	2.5 U	68	2.5 U	2.5 U	9.9	2.5 U	5.0 U
	03/28/18	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	48	2.5 U	25 U	2.5 U	2.5 U	89	2.5 U	2.5 U	11	2.5 U	5.0 U
	06/05/19	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	23	2.5 U	25 U	2.5 U	2.5 U	64	2.5 U	2.5 U	6.8	2.5 U	5.0 U
	09/22/21	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	40	1.0 U	10 U	5.0 U	1.0 U	64	1.0 U	1.0 U	8.0	1.0 U	2.0 U
OW-5	03/23/93	NR	<3.0 J	NR	<0.5	0.1 J	<0.5	<0.5	<1.3	<0.5	<0.6	<0.5	8.0 R	<0.5	NR	<3.8	<0.6	1.0	-	<0.5	<1.3	1.8	<0.6
	09/29/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	19	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/25/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	7 J	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<17	0.67 J	<1.7	<1.7	0.20 J	<3.3	<1.7	<3.3	<1.7	<1.0	<1.7	33	<1.7	<17	1.3 J,B	<1.0	7.8	-	<1.7	5.4	<3.3	<1.7
	01/06/00	1.3 J	0.66 J	<1.0	<1.0	0.29 J	<2.0	<1.0	<2.0	<1.0	<1.0	0.20 J	38	<1.0	<10	0.25 J,B	<1.0	18	-	0.041 J	9.0	0.26 J	<1.0
	06/07/00	<10	0.91 J	<1.0	<1.0	0.19 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.3	<1.0	<10	<1.0	<1.0	2.4	-	<1.0	1.7	<2.0	<1.0
	03/14/01	<10	0.46 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	14	<1.0	<10	<1.0	<1.0	6.2	-	<1.0	3.7	<2.0	<1.0
	08/29/01	<12	<1.2	<1.2	<1.2	0.21 J	<2.5	<1.2	<2.5	<1.2	<1.2	<1.2	29	<1.2	<12	<1.2	<1.2	7.0	-	<1.2	4.5	<2.5	<1.2
	04/24/02	14 U	0.35 J	<1.4	<1.4	0.20 J	<2.9	<1.4	<2.9	<1.4	<1.4	<1.4	37	<1.4	<14	1.4 U	<1.4	10	-	<1.4	5.3	<2.9	<1.4
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	31	<1.0	<10	<1.0	<1.0	9.5	-	<1.0	5.3	<2.0	<1.0
	04/10/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<10	<1.0	<1.0	5.5	-	<1.0	3	<2.0	<1.0
	04/25/04	<10	0.38 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.6	<1.0	<10	<1.0	<1.0	5.2	-	<1.0	2.5	<2.0	<1.0
	02/16/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	6.2	1.0 U	10 U	1.0 U	1.0 U	4.3	-	1.0 U	2.0	2.0 U	1.0 U
	05/23/06	10 U	0.69 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	20	1.0 U	10 U	1.0 U	1.0 U	5.7	1.0 U	1.0 U	2.6	0.27 J	1.0 U
	08/29/06	14 U	1.4 U	1.4 U	1.4 U	1.4 U	2.9 U	1.4 U	2.9 U	1.4 U	1.4 U	1.4 U	34	1.4 U	14 U	1.4 U	1.4 U	6.1	1.4 U	1.4 U	2.8 J	0.82 J	1.4 U
	11/29/06	10 U	0.26 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	30	1.0 U	10 U	1.0 U	1.0 U	7.1	1.0 U	1.0 U	3.5	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	8.7	1.0 U	10 U	1.0 U	1.0 U	4.0	1.0 U	1.0 U	1.9	2.0 U	1.0 U
	07/23/08	1.0 U	0.53 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	10	1.0 U	1.0 U	1.0 U	1.0 U	4.4	1.0 U	1.0 U	1.8	0.28 J	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	3.7	1.0 U	1.0 U	1.5	2.0 U	1.0 U
	07/21/10	10 U	0.37 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	4.8	1.0 U	10 U	1.0 U	1.0 U	4.2	1.0 U	1.0 U	1.6	2.0 U	1.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deepark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-5	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/06/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/11/14	25 U	0.32 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10	1.0 U	10 U	5.0 U	1.0 U	4.0	1.0 U	1.0 U	1.5	1.0 U	2.0 U
	09/24/15	13 U/17 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	1.3 U/1.7 U	31/33	1.3 U/1.7 U	13 U/17 U	1.3 U/1.7 U	1.3 U/1.7 U	14/16	1.3 U/1.7 U	1.3 U/1.7 U	4.2/4.5	1.3 U/1.7 U	2.7 U/3.3 U
	11/01/16	13 U/13 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	1.3 U/1.3 U	34/33	1.3 U/1.3 U	13 U/13 U	1.3 U/1.3 U	1.3 U/1.3 U	22/21	1.3 U/1.3 U	1.3 U/1.3 U	5.1/5.0	1.3 U/1.3 U	2.5 U/2.5 U
	03/28/18	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	14/14	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	18/18	1.0 U/1.0 U	1.3 U/1.3 U	4.2/4.3	1.0 U/1.0 U	2.0 U/2.0 U
	06/04/19	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	4.5/4.4	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	6.5/6.2	1.0 U/1.0 U	1.3 U/1.3 U	1.6/1.8	1.0 U/1.0 U	2.0 U/2.0 U
	09/21/21	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	20/21	1.0 U/1.0 U	10 U/10 U	5.0 U/5.0 U	1.0 U/1.0 U	14/14	1.0 U/1.0 U	1.0 U/1.0 U	3.7/3.5	1.0 U/1.0 U	2.0 U/2.0 U
	03/23/93	NR	<1.3 J	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.3 J	<0.5	NR	<0.7 J,B	<0.5	13	<0.5	<2.9	1.1	<0.5	
OW-6	09/27/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	4 J	<10	NR	<10	<10	17	-	<10	6.0 J	<10	<10
	04/23/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	19	-	<10	5.0 J	<10	<10
	02/18/99	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<1.0	3.7 B	<1.0	20	-	<1.0	4.6	<2.0	<1.0
	01/06/00	1.4 J	0.19 J,B	0.58 J	<1.0	<1.0	<2.0	<1.0	0.17 J	<1.0	<1.0	0.28 J	5.1	<1.0	<1.0	0.26 J,B	<1.0	21	-	<1.0	4.6	<2.0	<1.0
	06/07/00	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	<1.0	<1.0	14	-	<1.0	2.6	<2.0	<1.0
	03/15/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.9	<1.0	<1.0	<1.0	<1.0	19	-	<1.0	3.9	<2.0	<1.0
	08/29/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.7	<1.0	<1.0	<1.0	<1.0	12	-	<1.0	2.3	<2.0	<1.0
	04/24/02	10 U	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.7	<1.0	<1.0	1.1 U	<1.0	12	-	<1.0	2.9	<2.0	<1.0
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.8	<1.0	<1.0	<1.0	<1.0	15	-	<1.0	3.9	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	21	<1.0	<1.0	0.34 J	<1.0	28	-	<1.0	6.8	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	21	<1.0	<1.0	<1.0	<1.0	32	-	<1.0	6.3	<2.0	<1.0
	02/16/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	19	1.7 U	17 U	1.7 U	1.7 U	39	-	1.7 U	7.9	3.3 U	1.7 U
	05/23/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	24	1.7 U	17 U	1.7 U	1.7 U	39	1.7 U	1.7 U	7.8	3.3 U	1.7 U
	08/31/06	14 U	1.4 U	1.4 U	1.4 U	1.4 U	2.9 U	1.4 U	2.9 U	1.4 U	1.4 U	1.4 U	20	1.4 U	14 U	1.4 U	1.4 U	40	1.4 U	1.4 U	7.7	2.9 U	1.4 U
	11/29/06	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	20	1.7 U	17 U	0.75 J	1.7 U	41	1.7 U	1.7 U	8.6	3.3 U	1.7 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	19	1.0 U	10 U	1.0 U	1.0 U	36	1.0 U	1.0 U	9.0	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	16	1.0 U	10 U	1.0 U	1.0 U	31	1.0 U	1.0 U	6.3	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	16	1.0 U	10 U	1.0 U	1.0 U	30	1.0 U	1.0 U	5.5	2.0 U	1.0 U
	07/21/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	20	1.0 U	10 U	1.0 U	1.0 U	42	1.0 U	1.0 U	8.6	2.0 U	1.0 U
	10/13/11	17 U	1.7 U	1.7 U	1.7 U	1.7 U	3.3 U	1.7 U	3.3 U	1.7 U	1.7 U	1.7 U	40	1.7 U	17 U	1.7 U	1.7 U	52	1.7 U	1.7 U	11	1.7 U	3.3 U
	02/06/13	13 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	19	1.3 U	13 U	1.3 U	1.3 U	44	1.3 U	1.3 U	8.9	1.3 U	2.5 U
	06/11/14	25 U	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17	1.0 U	10 U	5.0 U	1.0 U	62	1.0 U	1.0 U	10	1.0 U	2.0 U
	09/24/15	13 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	15	1.3 U	13 U	1.3 U	1.3 U	38	1.3 U	1.3 U	7.7	1.3 U	2.5 U
	11/01/16	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	14	2.0 U	20 U	2.4	2.0 U	42	2.0 U	2.0 U	7.7	2.0 U	4.0 U
	03/28/18	62 J	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	17	2.0 U	20 U	2.0 U	2.0 U	47	2.0 U	2.0 U	9.1	2.0 U	4.0 U
	06/05/19	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	14	2.0 U	20 U	2.0 U	2.0 U	50	2.0 U	2.0 U	7.6	2.0 U	4.0 U
	09/22/21	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	19	1.0 U	10 U	5.0 U	1.0 U	42 J	1.0 U	1.0 U	6.9 J	1.0 U	2.0 U
OW-8	03/23/93	NR	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.8 B	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	09/26/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/20/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/18/99	<10	0.32 J	0.17 J	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.32 J	<1.0	0.17 J	-	<1.0	<1.0	<2.0	<1.0
	01/06/00	<10	0.49 J	<1.0	<1.0	0.37 J	<2.0	0.083 J	<2.0	<1.0	<1.0	0.22 J	<1.0	0.14 J	<1.0	0.35 J,B	<1.0	<1.0	-	0.097 J	<1.0	<2.0	<1.0
	06/07/00	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/15/01	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	08/29/01	<10	0.20 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/24/02	10 U	0.20 J	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/19/02	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/09/03	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/25/04	<10	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-8	02/16/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/14/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/20/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/06/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-10	10/29/93	NR	37	NR	<1.0	<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	2.9 B	<1.0	<1.0	-	0.5 J	<1.0	<1.0	<1.0
	09/25/94	68	1,100	<10	<10	4 J	<10	<10	<10	<10	<10	<10	<10	9 J	NR	<10	<10	<10	-	8 J	<10	<10	53
	04/27/95	<50	2,600	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50	<50	30 J
	02/16/99	<2,000	1,900	<200	<200	23 J	<400	<200	<400	<200	<200	<200	<200	<200	<2,000	100 J,B	<200	<200	-	25 J	<200	<400	<200
OW-10R	01/07/00	610	400	<17	<17	3.6 J,B	<33	<17	<33	<17	<17	<17	<17	4.3 J	<170	<17	<17	<17	-	8.5 J	<17	10 J	6.2 J
	06/06/00	<50	130 J	<5.0	<5.0	3.0 J	<10	<5.0	<10	<5.0	<5.0	<5.0	<5.0	2.2 J	<50	<5.0	<5.0	<5.0	-	0.52 J	<5.0	2.2 J	<5.0
	03/14/01	<10	35	<1.0	<1.0	3.6	0.80 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	0.89 J	<10	<1.0	<1.0	<1.0	-	0.44 J	<1.0	2.4	<1.0
	08/29/01	<20	55	<2.0	<2.0	1.4 J	1.1 J	<2.0	<4.0	<2.0	<2.0	<1.0	3.5	<1.0	<20	<1.0	<2.0	<2.0	-	<1.0	<2.0	9.5	<2.0
	04/25/02	<10	30	<1.0	<1.0	4.0	2.8	<1.0	<2.0	<1.0	<1.0	<1.0	2.7	2.0 U	<10	1.2 U	<1.0	<1.0	-	1.0 U	<1.0	4.5	1.0 U
	09/19/02	<10	17	<1.0	<1.0	2.9	1.3 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.5	0.91 J	<10	<1.0	<1.0	<1.0	-	0.39 J	<1.0	6.3	<1.0
	04/09/03	<10	6.8	<1.0	<1.0	3.1	0.54 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.43 J	<1.0	<1.0	-	<1.0	<1.0	0.72 J	<1.0
	04/26/04	<10	8.1	<1.0	<1.0	2.2	0.80 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.57 J	0.22 J	<10	1.0 U	<1.0	<1.0	-	0.27 J	<1.0	0.99 J	<1.0
	02/15/06	10 U	3.2	1.0 U	1.0 U	1.4	0.52 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.47 J	1.3 U
	08/29/06	10 U	9.9	1.0 U	1.0 U	1.4	0.92 J	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	0.59 J	0.25 J	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7 J	1.0 U
	06/13/07	10 U	4.7	1.0 U	1.0 U	1.4	0.94 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.47 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.89 J	1.0 U
	07/22/08	10 U	5.7	1.0 U	1.0 U	0.71 J	0.48 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.46 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 J	1.0 U
	07/15/09	10 U	2.7	1.0 U	1.0 U	2.3	0.62 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.33 J	1.0 U
	07/20/10	10 U	4.6	1.0 U	1.0 U	0.88 J	0.87 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.39 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.66 J	1.0 U
	10/13/11	10 U	2.4	1.0 U	1.0 U	5.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	2.8	1.0 U	1.0 U	6.0	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/24/15	10 U	3.8	1.0 U	1.0 U	1.3	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	2.4	1.0 U	1.0 U	1.0 U	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.2	1.0 U	1.0 U	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/05/19	10 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/21/21	10 U	1.6	1.0 U	1.0 U	2.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-13	10/28/93	NR	230	NR	<1.0	<1.0	<1.0	<1.0	<1.0	0.4 J	<1.0	<1.0	12	0.2 J	NR	1.2 J,B	<1.0	<1.0	-	4.8	0.9 J	<1.0	0.8 J
	09/29/94	<10	40	<10	<10	<10	<10	<10	<10	<10	<10	<10	6 J	<10	NR	<10	<10	<10	-	<10	<10	9 J	<10
	04/25/95	<10	350	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	<10	<10	-	<10	<10	34	<10
	02/16/99	<330	490	<33	<33	<33	<67	<33	<67	<33	<33	<33	52	<33	<330	18 J,B	<33	<33	-	7.6 J	<33	48 J	<33
	01/06/00	<200	620	<20	<20	<20	<40	3.5 J,B	<40	<20	<20	<20	56	2.3 J	<200	<20	<20	<20	-	2.7 J,B	1.3 J	58	<20
	06/07/00	<83	200	<8.3	<8.3	0.84 J	<17	<8.3	<17	<8.3	<8.3	<8.3	15	5.5 J	<83	<8.3	<8.3	<8.3	-	<8.3	<8.3	17	<8.3
	03/14/01	<50	130	<5.0	<5.0	<5.0	<10	<5.0	<10	<5.0	<5.0	<5.0	15	4.0 J	<50	3.0 J	<5.0	<5.0	-	<5.0	<5.0	12	<5.0
	08/29/01	<62	120	<6.2	<6.2	<6.2	<12	<6.2	<12	<6.2	<6.2	<6.2	12	<6.2	<62	<6.2	<6.2	<6.2	-	<6.2	1.1 J	9.9 J	<6.2
	04/24/02	<56	160	<5.6	<5.6	<5.6	<11	<5.6	<11	<5.6	<5.6	<5.6	11	<5.6	<56	<5.6	<5.6	<5.6	-	5.6 U	1.2 J	9.9 J	<5.6
	09/19/02	<33	81	<3.3	<3.3	<3.3	<6.7	<3.3	<6.7	<3.3	<3.3	<3.3	8.5	1.8 J	24 J	<3.3	<3.3	<3.3	-	<3.3	<3.3	5.9 J	<3.3
	04/10/03	<25	53	<2.5	<2.5	<2.5	<5.0	<2.5	<5.0	<2.5	<2.5	<2.5	5.9	1.6 J	<25	<2.5	<2.5	<2.5	-	<2.5	<2.5	4.9 J	<2.5
	04/25/04	<17	45	<1.7	<1.7	0.38 J	<3.3	<1.7	<3.3	<1.7	<1.7	<1.7	4.9	1.0 J	<17	<1.7	<1.7	<1.7	-	0.31 J	0.67 J	3.2 J	<1.7

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deepark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethylbenzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)	
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*	
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000	
Well ID	Date																							
OW-13R	02/20/06	10 U	15	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.60 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.29 J	1.0 U	1.1 J	1.0 U	
	08/29/06	10 U	15	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.40 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3 J	1.0 U	
	06/12/07	10 U	11	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.42 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.86 J	1.0 U	
	07/22/08	10 U/10 U	6.5 J/6.8 J	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.70 J/0.70 J	1.0 U/1.0 U	
	07/14/09	10 U/10 U	13/12	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.4/2.3	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.64 J/0.63 J	1.6 J/1.6 J	1.0 U/1.0 U
	07/21/10	10 UJ/10 UJ	17/17	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	1.0 U/1.0 U	2.0 UJ/2.0 UJ	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.70J/0.78J	1.0 U/1.0 U	10 U/10 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.35 J/0.35 J	1.2 J/1.2 J	1.0 U/1.0 U
	10/13/11	10 U/10 U	1.0 U/1.3 J	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	
	02/08/13	10 U/10 U	5.4/5.0	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.9/1.8	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	2.0 U/2.0 U	
	06/11/14	25 U/25 U	9.8/10	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.47J/0.47J	1.0 U/1.0 U	10 U/10 U	5.0 U/5.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	1.0 U/1.0 U	0.22J/0.24J	0.80J/0.97J	2.0 U/2.0 U
	09/23/15	10 U	5.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	2.0 U	
	11/02/16	10 UJ	4.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	03/28/18	10 U	3.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	06/05/19	10 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	09/21/21	10 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
OW-15	09/24/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10	
	04/26/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	
	02/16/99	<10	1.1	<10	<10	0.52 J	<20	<10	<20	0.25 J	<10	<10	0.38 J	<10	<10	<10	<10	<10	-	<10	<10	1.5 J	<10	
	01/07/00	1.3 J	1.0 B	0.92 J	<10	0.64 J	<20	<10	<20	0.31 J	<10	0.57 J	<10	<10	<10	0.35 J,B	0.15 J,B	<10	-	0.074 J	<10	1.4 J	<10	
	06/06/00	<10	0.91 J	<10	<10	0.60 J	<20	<10	<20	0.28 J	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	1.0 J	<10	
	03/14/01	<10	1.2	<10	<10	0.67 J	<20	<10	<20	<10	<10	<10	0.37 J	<10	<10	<10	<10	<10	-	<10	<10	1.1 J	<10	
	08/28/01	2.2 J,B	0.61 J	<10	<10	0.35 J	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	0.52 J	<10	
	04/25/02	<10	0.99 J	<10	<10	0.47 J	<20	<10	<20	<10	<10	<10	<10	<10	<10	1.0 U	<10	<10	-	<10	<10	0.91 J	<10	
	09/18/02	<10	0.69 J	<10	<10	0.43 J	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	04/08/03	<10	1.2	<10	<10	0.67 J	<20	<10	<20	0.33 J	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10 J	<10	
	04/23/04	<10	1.2	<10	<10	0.67 J	<20	<10	<20	0.29 J	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	0.90 J	<10	
	02/15/06	10 U	0.88 J	1.0 U	1.0 U	0.53 J	2.0 U	1.0 U	2.0 U	0.24 J	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.73 J	1.3 U	
	08/29/06	10 U	0.78 J	1.0 U	1.0 U	0.51 J	2.0 U	1.0 U	0.37 J	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.82 J	1.0 U	
OW-16	09/24/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10	
	04/26/95	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	
	02/17/99	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	01/06/00	1.4 J	0.082 J,B	<10	<10	<10	<20	<10	<20	<10	<10	0.61 J	<10	<10	<10	0.30 J,B	<10	<10	-	<10	<10	<20	<10	
	06/07/00	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	03/14/01	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	08/28/01	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	0.36 J	<10	<10	<10	0.80 J	<10	<10	-	<10	<10	<20	<10	
	04/24/02	10 U	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	1.9 U	<10	<10	-	<10	<10	<20	<10	
	09/19/02	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	04/10/03	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	04/25/04	<10	<10	<10	<10	<10	<20	<10	<20	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<20	<10	
	02/17/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.37 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U	
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.35 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
OW-17	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.0 U	1.0 U	
	05/24/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	11/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-18	09/23/94	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/29/95	<10	12	<10	<10	10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	1 J	<10	<10	29
	02/17/99	<17	4.7	<1.7	<1.7	3.4	1.0 J	<1.7	<3.3	<1.7	<1.7	<1.7	0.54 J	<1.7	<17	1.0 J,B	<1.7	<1.7	-	<1.7	<1.7	<3.3	1.1 J
	01/07/00	2.7 J	5.6 B	1.0	<1.0	4.5	3.0	<1.0	<2.0	0.66 J	<1.0	0.29 J	<1.0	<1.0	<10	0.40 J,B	<1.0	<1.0	-	0.22 J	0.14 J	0.29 J	1.8
	06/08/00	<10	4.8	<1.0	<1.0	4.6	1.3 J	<1.0	<2.0	0.24 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/16/01	10 UJ	3.1	<1.0	<1.0	3.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.38 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.4
	08/28/01	2.3 J,B	2.4 J	<1.0	<1.0	3.6 J	<2.0	<1.0	<2.0	0.18 J	<1.0	<1.0	0.38 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.3 J
	04/24/02	10 U	1.5	<1.0	<1.0	4.3	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.28 J	<1.0	<10	1.6 U	<1.0	<1.0	-	1.0 U	<1.0	<2.0	1.7
	09/17/02	<10	2.9	<1.0	<1.0	5.5	1.3 J	<1.0	<2.0	0.36 J	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	2.0
	04/08/03	2.6 J	2.9	<1.0	<1.0	5.6	1.2 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.2
	04/23/04	10 U	3.3	<1.0	<1.0	7.3	0.74 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.2
	02/17/06	10 U	5.1	1.0 U	1.0 U	10	3.2	1.0 U	2.0 U	1.6	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.49 J	1.0 U	2.0 U	10
	08/30/06	10 U	3.7	1.0 U	1.0 U	7.8	0.91 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/14/07	10 U	1.2	1.0 U	1.0 U	6.5	0.46 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	07/22/08	10 U	1.5	1.0 U	1.0 U	6.9	0.40 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	07/16/09	10 U	2.3	1.0 U	1.0 U	9.6	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	07/22/10	1.6 J	2.8	1.0 U	1.0 U	11	0.41 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	0.63 J	
	10/13/11	10 U	3.7	1.0 U	1.0 U	8.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	2.0 U	
	02/07/13	10 U	5.1	1.0 U	1.0 U	11	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	2.0 U	
	06/11/14	25 U	3.2	1.0 U	1.0 U	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.32 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	2.0 U
	09/23/15	10 U	3.5	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	11/02/16	10 UJ	5.0	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	03/27/18	10 UJ	4.5	1.0 U	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	06/06/19	10 U	1.8	1.0 U	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	09/21/21	10 U	3.9	1.0 U	1.0 U	18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
OW-19	09/27/94	<10	10 J	<10	<10	5 J	15	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/28/95	<10	8 J	<10	<10	6 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/17/99	<10	5.8	<1.0	<1.0	7.1	6.1	<1.0	<2.0	0.27 J	<1.0	<1.0	3.3	<1.0	<10	0.16 J,B	<1.0	<1.0	-	0.16 J	0.14 J	10	<1.0
	01/05/00	0.94 J	3.7 B	<1.0	<1.0	10	2.7	<1.0	<2.0	0.16 J	0.27 J	<1.0	1.5	<1.0	<10	0.25 J,B	<1.0	<1.0	-	0.15 J	0.15 J	2.1	<1.0
	06/08/00	<10	2.3	<1.0	<1.0	5.2	1.9 J	<1.0	<2.0	<1.0	<1.0	<1.0	1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	03/16/01	10 UJ	1.7	<1.0	<1.0	3.8	1.4 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.96 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	1.3 J	<1.0
	08/28/01	2.7 J,B	1.9 J	<1.0	<1.0	7.2 J	0.92 J	<1.0	<2.0	<1.0	<1.0	0.35 J	0.46 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/23/02	10 U	1.3	<1.0	<1.0	6.5	0.71 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.43 J	<1.0	<10	1.0 U	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	09/17/02	<10	0.64 J	<1.0	<1.0	4.9	0.73 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	<1.0
	04/08/03	2.5 J	3	<1.0	<1.0	4.9	1.7 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.81 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.68 J	<1.0
	04/24/04	10 U	2.1	<1.0	<1.0	6	1.3 J	<1.0	<2.0	<1.0	<1.0	<1.0	0.58 J	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.56 J	<1.0
	02/17/06	10 U	3.4	1.0 U	1.0 U	5.6	1.9 J	1.0 U	<2.0	1.0 U	1.0 U	1.0 U	1.3	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	2.9	1.0 U
	08/31/06	3.1 J	3.3	1.0 U	1.0 U	13	1.8 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.85 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.1	1.0 U
	06/14/07	10 U	2.1	1.0 U	1.0 U	8.8 J	1.3 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.73 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.87 J	1.0 U
	07/22/08	10 U	1.4	1.0 U	1.0 U	11	0.91 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.49 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.62 J	1.0 U
	07/15/09	10 U	1.9	1.0 U	1.0 U	7.9	1.0 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.94 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U
	07/22/10	1.3 J	1.2	1.0 U	1.0 U	11	0.85 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.65 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.63 J	1.0 U
	10/13/11	10 U	3	1.0 U	1.0 U	8.4	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.3	2.0 U
	02/07/13	10 U	2.5	1.0 U	1.0 U	14	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.1	2.0 U
	06/11/14	25 U	1.4	1.0 U	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	2.0 U
	09/23/15	10 U	1.0 U	1.0 U	1.0 U	6.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	11/02/16	10 UJ	1.0 U	1.0 U	1.0 U	5.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	03/27/18	10 U	1.6	1.0 U	1.0 U	9.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	06/06/19	10 U	1.6	1.0 U	1.0 U	16	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
	09/21/21	10 U	1.0 U	1.0 U	1.0 U	7.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SCV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-21	09/22/94	6 J	5 J	<10	<10	<10	<10	10 J	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	<10
	04/29/95	<10	8 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10
	02/16/99	<10	5.8	<1.0	<1.0	0.11 J	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.26 J	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.89 J	<1.0
	01/04/00	<10	3.8 B	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	0.11 J	<1.0	<1.0	<1.0	<1.0	<1.0	0.10 J,B	<1.0	<1.0	-	0.055 J	<1.0	0.46 J	<1.0
	06/07/00	<10	5.4	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.54 J	<1.0
	03/13/01	10 UJ	4.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.70 J	<1.0
	08/30/01	10 U	3.2	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.38 J	<1.0	<1.0	-	<1.0	<1.0	0.25 J	<1.0
	04/25/02	<10	2.4	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0 U	<1.0	<1.0	-	<1.0	<1.0	0.33 J	<1.0
	09/18/02	<10	2.5	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.39 J	<1.0
	04/09/03	<10	3.7	<1.0	<1.0	<1.0	<2.0	<1.0	5.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.51 J	<1.0	<1.0	-	<1.0	<1.0	0.88 J	<1.0
	04/24/04	<10	2.9	<1.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	0.56 J	<1.0
	02/16/06	10 U	3.0	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.52 J	1.0 U
	08/29/06	10 U	2.4	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	0.27 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.83 J	1.0 U
	06/13/07	10 U	2.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.67 J	1.0 U
	07/23/08	10 U	5.6	1.0 U	1.0 U	1.0 U	<2.0	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.74 J	1.0 U
	07/15/09	10 U	2.1	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.80 J	1.0 U
	07/20/10	10 U	1.9	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.71 J	1.0 U
	10/13/11	10 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/10/14	25 U	1.8	0.98 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.78 J	2.0 U
	09/24/15	10 U	1.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/06/19	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-22	09/24/94	<10	100	<10	<10	9 J	<10	<10	<10	<10	<10	<10	<10	<10	NR	<10	<10	<10	-	<10	<10	<10	5 J
	04/28/95	<10	48	<10	<10	10 J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	1 J	<10	<10	<10
	02/17/99	<25	46	<2.5	<2.5	8.0	<5.0	<2.5	<5.0	<2.5	<2.5	2.4 J	<2.5	<2.5	<25	1.1 J,B	<2.5	<2.5	-	0.87 J	<2.5	4.2 J	3.5
	01/04/00	1.5 J	37 B	0.41 J	<1.2	5.8	<2.5	<1.2	<2.5	0.21 J	<1.2	<1.2	<1.2	0.098 J	<12	0.23 J,B	<1.2	<1.2	-	0.58 J	0.073 J	1.5 J	1.7
	06/07/00	<10	11	<1.0	<1.0	5.8	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	1.4
	03/13/01	10 UJ	12	<1.0	<1.0	8.2	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	0.70 J	<1.0	<10	<1.0	<1.0	<1.0	-	0.56 J	<1.0	0.76 J	1.9
	08/30/01	10 U	3.4	<1.0	<1.0	4.6	<2.0	0.34 J	<2.0	<1.0	<1.0	<1.0	0.36 J	<1.0	<10	0.36 J	<1.0	<1.0	-	0.45 J	<1.0	<2.0	1.7
	04/25/02	<10	4.2	<1.0	<1.0	3.7	<2.0	<1.0	<2.0	<1.0	0.29 J	<1.0	<1.0	<1.0	<10	1.2 U	<1.0	<1.0	-	1.0 U	<1.0	0.39 J	2.7 U
	09/18/02	<10	2.9	<1.0	<1.0	4.2	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	<1.0	<1.0	<2.0	1.8
	04/09/03	<10	8.7	<1.0	<1.0	8.5	0.66 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	0.40 J,B	<1.0	<1.0	-	<1.0	<1.0	0.56 J	1.6
	04/24/04	10 U	4.2	<1.0	<1.0	5.9	0.24 J	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	<1.0	<1.0	-	0.23 J	<1.0	0.32 J	1.1
	02/16/06	10 U	7.5	1.0 U	1.0 U	11	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U	<10	0.59 J	1.0 U	1.0 U	-	0.26 J	1.0 U	0.29 J	1.0
	08/31/06	10 U	2.8	1.0 U	1.0 U	5.3	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.37 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J	0.41 J	1.1
	06/14/07	10 U	3.5	1.0 U	1.0 U	4.8	0.26 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.50 J	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.21 J	0.37 J	0.76 J
	07/23/08	10 U	1.9	1.0 U	1.0 U	4.6	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.17 J	0.32 J	0.66 J
	07/15/09	10 U	5.1	1.0 U	1.0 U	7.8	0.34 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.53 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.19 J	0.35 J	1.0 U
	07/20/10	10 U	2.5	1.0 U	1.0 U	4.5	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	0.38 J	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.26 J	0.64 J
	10/13/11	10 U	5.3	1.0 U	1.0 U	18	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/08/13	10 U	6.2	1.0 U	1.0 U	9.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/10/14	25 U	3.5	1.0 U	1.0 U	5.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.41 J	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.37 J	0.39 J
	09/24/15	10 U	2.0	1.0 U	1.0 U	4.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/01/16	10 U	1.8	1.0 U	1.0 U	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/28/18	10 U	5.6	1.0 U	1.0 U	7.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/06/19	10 U	2.4	1.0 U	1.0 U	9.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Table B-1
Historical Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Analyte		Acetone	Benzene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-benzene	Chloro-ethane	Chloroform	Chloro-methane	1,1-DCA	1,2-DCA	1,1-DCE	1,2-DCE (total)	Ethyl-benzene	2-Hexanone	Methylene Chloride	1,1,2,2-PCA	PCE	Styrene	Toluene	TCE	Vinyl Chloride	Xylenes (total)
NYSDEC SGV		50 (G)	1 (S)	NA	5 (S)	5 (S)*	5 (S)*	7 (S)	1	5 (S)*	0.6 (S)	5 (S)*	5 (S)*	5 (S)*	50 (G)	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	5 (S)*	2 (S)	5 (S)*
U.S. EPA MCL		NA	5	NA	5	100	NA	NA	5	NA	5	7	70	700	NA	5	NA	5	100	1,000	5	2	10,000
Well ID	Date																						
OW-23	02/17/06	10 U	0.38 J	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	1.0 U	1.0 U	0.66 J	1.0 U
	05/23/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	0.44 J	1.0 U	1.0 U	0.39 J	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.42 J	1.0 U
	11/30/06	10 U	0.23 J	1.0 U	1.0 U	1.0 U	0.27 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J	1.0 U	0.51 J	1.0 U
OW-24	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	-	0.22 J	1.0 U	2.0 U	<1.0
	05/24/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	0.45 J	1.0 U	1.0 U	2.0 U	1.0 U
	08/30/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	11/29/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	3.6 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	2.0 U	1.0 U
	07/22/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	0.47 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	3.6 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/07/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/23/15	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	11/02/16	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	03/27/18	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	06/06/19	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	09/21/21	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
OW-25	02/20/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	05/23/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		2.0 U	1.0 U
	08/31/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	11/29/06	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	06/12/07	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/23/08	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/16/09	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	07/22/10	10 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U
	10/13/11	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
	02/07/13	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U

Notes:

TCL = Target Compound List

NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) Values for groundwater

U.S. EPA MCL= United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater

* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.

U (DATA VALIDATION QUALIFIER) = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

< = Analyte not detected at reporting limit

B = Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Red = Concentrations detected above regulatory limit

Blue = Analyte detected at or below the regulatory limit, or analyte detected but no regulatory criteria specified

UJ = (DATA VALIDATION QUALIFIER) = Analyte not detected above the reporting limit; however, the reporting limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Pre-1999 data from RETEC 1995

Pre-1999 analysis performed by Method 8240

1999 and later analyses performed by Method 8260B

NA = Not applicable; no criteria specified

NR = Analyte not reported

R = Data rejected during validation

J = Estimated result; result is less than reporting limit.

Appendix C
Data Quality Review Checklist

Tier II
VOA Organic Data Review Summary

Job No./Matrix: 240-156932-1 groundwater		Completion Date: 10/19/2021	
Project No.: 104-0012		Reviewer: Barbara Jones	
Laboratory: Eurofins Environment Testing America (formerly TestAmerica, North Canton, OH)			
Review Criteria	Data Qualified Yes / No	Samples Qualified	
1. Data completeness	No	A complete 706-page data package was provided with reagent traceability documentation, standards data, QC sample results and association, and all other information needed for review.	
2. Preservation/holding time	No	The lab reported that all samples arrived in good condition. Next day FEDEX delivery was scheduled but was delayed, and when the cooler was delivered to the laboratory the cooler temperature was greater than 6°. No qualifications were made, because the samples were preserved, had been iced and chilled upon collection, were insulated in foam sleeves and bubble wrap, and were sealed. All analyses were performed within the 14-day analytical window.	
3. GC/MS tuning/instrument performance check – Form V	No	Form Vs for two instruments and all batch run days were provided and covered all standards, regular samples, and QC samples. BFB mass spectrum met ion abundance criteria in all cases.	
4. Calibration:			
4A – Initial – Form VI	No	Form VIs and backup (quantitation sheets, chromatograms, etc.) provided for two instruments, A3UX11, and A3UX15.	
4B – Continuing – Form VII	Yes	Form VIIs and backup (quantitation sheets, chromatograms, etc.) provided for two instruments, A3UX11, and A3UX15. The CC associated with OW-2 recovered above the control limit for 1,2-dichloropropane, however, this was not detected in the sample. The nondetect result is qualified as UJ.	
5. Blanks:			
5A - Laboratory (method) blanks – Form IV	No	Form IVs for four method blanks covering all samples and QC samples were provided. The MB Form Is indicate no VOC detections.	
5B – Field blank	No	One field blank was collected by pouring laboratory-provided ultrapure water into a sample container. The field blank was nondetectable for all reported VOCs; there are no qualifications.	

5C - Equipment rinsates	No	A pump rinsate blank was collected from the bladder pump used to collect groundwater samples by rinsing it with ultrapure water provided by the laboratory. The pump rinsate blank was nondetectable for all reported VOCs; there are no qualifications.
5D – Trip Blanks	No	A trip blank made up of ultrapure water in a sample container was sent with the sample cooler. No VOCs were detected in the trip blank.
6. Surrogate recovery – Form II	No	Recoveries for DBFM, DCA, TOL, and BFB (four surrogates) were within upper and lower limits for all field samples and QC samples.
7. Lab-control sample – Form III	Yes	There were four LCS samples. For two samples recoveries were all within the specified QC limits. One LCS had low recoveries for three compounds. The compounds, which were nondetect on the associated field samples (OW-24, OW-18, OW-19, OW-10R, OW-13R, OW-5), were qualified as UJ.
8. Matrix spike/matrix spike duplicates – Form III	Yes	Percent recovery for OW-6 MS for tetrachloroethene was slightly below lower limit. Percent recovery and relative percent differences (RPD) for OW-6 MSD were not met for all compounds, mostly nondetects. Tetrachloroethene and trichloroethene for OW-6 were qualified as J (estimated) because MS/MSD of recoveries below limits.
9. Field duplicates	No	OW-5 and OW-5 DUP were field duplicates. RPDs for the three detected VOCs were low (maximum of 5.6%), well below the 30% QC limit.
10. Internal standards performance - Form VIII	No	Internal standard areas and retention time summary sheets were provided for two instruments, covering standards, samples, and QC samples. All results fell between upper and lower limits.
11. Compound quantitation and reporting	No	There were no sample dilutions except for OW-2, tetrachloroethene. This compound was reanalyzed at a dilution of 3.3. Tetrachloroethene was over range in OW-6 also, but the sample was consumed and could not be reanalyzed. The result was flagged by the laboratory as “E” for estimated. Spot checked OW-5 and OW-2 quantitation sheets; no deviations were detected.
12. Tentatively identified compounds	Not applicable	TIC reporting is not required for this project.

Appendix D

Photographs



A truck yard, garage, and gravel storage areas for Dick's concrete are located southwest of the C&D site



The City of Port Jervis police shooting range is at the southwest entrance to the C&D site



A wetland and Gold Creek are located beyond the trees in the background, southeast of the road to commercial gravel pits



The historic, closed City of Port Jervis landfill is south and downgradient of the former C&D waste lagoons



The City of Port Jervis operates a small sand and gravel operation downgradient of the C&D site



Screening plant for City of Port Jervis sand and gravel operation



The vegetative growth at the City of Port Jervis sand and gravel operation is an indication of low activity here



The historic tow path is located east of the lagoon area. The tow path used to be accessible to vehicles but is now impassable due to deadfall and heavy vegetation.



The area of former Lagoon 1 has naturally revegetated with trees and undergrowth



The former Lagoon 4 area, like Lagoon 1 and all areas that were remediated under OU-1, have returned to a naturally reforested state



Looking west from OW-17 (foreground) at toe of historic municipal landfill



OW-24 (between bollards) is the one monitoring well along the commercial gravel pit road that can be easily found



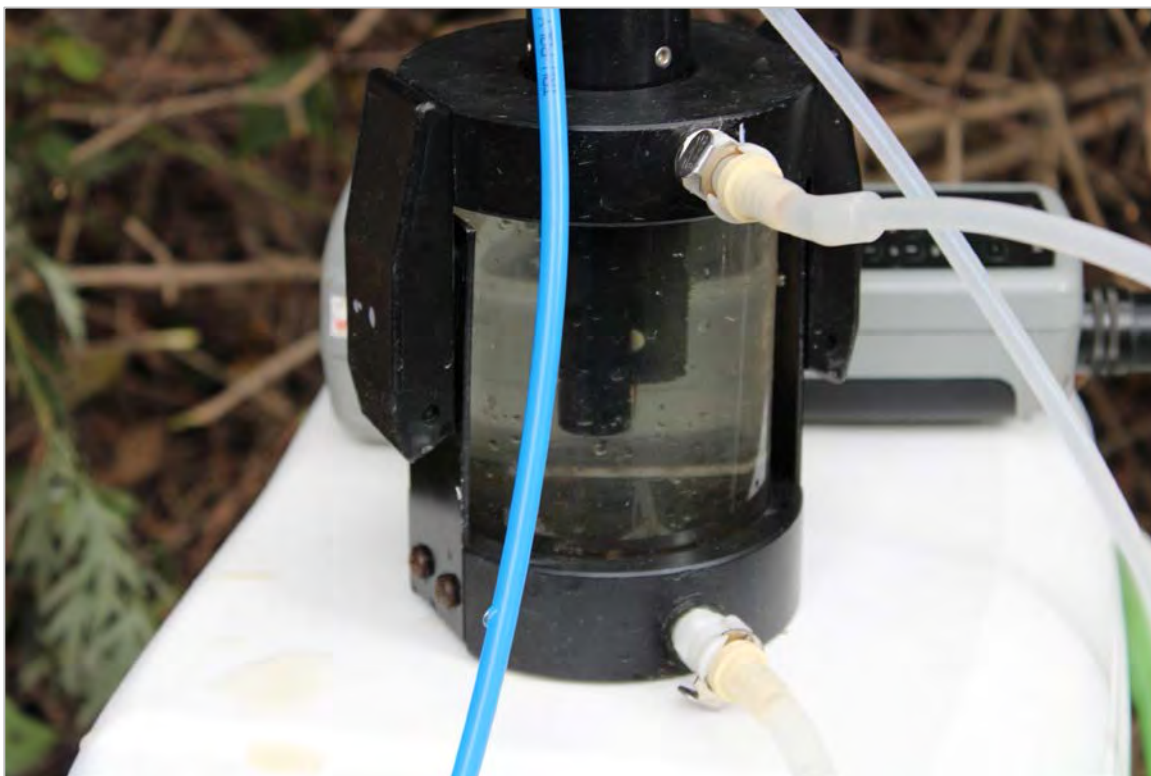
Weedy overgrowth made it difficult to locate some of the monitoring wells



Chopping weeds so that OW-10R could be accessed for sampling



A downhole stainless steel bladder pump with a single use PE bladder was used to sample OW-19. Compressed air was used to pump the water.



At OW-19, low-flow purging produced a clear discharge. To collect the sample, the downhole tubing was disconnected from the flow-through cell.